SAMSUNG

SAMSUNG COLOR LASER PRINTER

CLP-510/XBH

Basic Model : CLP-510/CLP-510N

SERVICE Manual

SAMSUNG COLOR LASER PRINTER

CONTENTS

1. Precautions

In order to prevent accidents and to prevent damage to the equipment please read the precautions listed below carefully before servicing the printer and follow them closely.

1.1 Safety Warning

(1) Only to be serviced by appropriately qualified service engineers.
High voltages and lasers inside this product are dangerous. This printer should only be serviced by a suitably trained and qualified service engineer.

(2) Use only Samsung replacement parts
There are no user serviceable parts inside the printer. Do not make any unauthorized changes or additions to the printer, these could cause the printer to malfunction and create electric shock or fire hazards.

(3) Laser Safety Statement
The Printer is certified in the U.S. to conform to the requirements of DHHS 21 CFR, chapter 1 Subchapter J for Class 1(1) laser products, and elsewhere, it is certified as a Class I laser product conforming to the requirements of IEC 825. Class I laser products are not considered to be hazardous. The laser system and printer are designed so there is never any human access to laser radiation above a Class I level during normal operation, user maintenance, or prescribed service condition.

Warning >> Never operate or service the printer with the protective cover removed from Laser/Scanner assembly. The reflected beam, although invisible, can damage your eyes. When using this product, these basic safety pre-cautions should always be followed to reduce risk of fire, electric shock, and injury to persons.

CAUTION - INVISIBLE LASER RADIATION
WHEN THIS COVER OPEN.
DO NOT OPEN THIS COVER.

VORSICHT - UNSICHTBARE LASERSTRAHLUNG,
WENN ABDECKUNG GE FFNET.
NICHT DEM STRAHL AUSSETZEN.

ATTENTION - RAYONNEMENT LASER INVISIBLE EN CAS
D OUVERTURE. EXPOSITION DANGEREUSE
AU FAISCEAU.

ATTENZIONE - RADIAZIONE LASER INVISIBILE IN CASO DI
APERTURA. EVITARE L ESPOSIZIONE AL
FASCIO.

PRECAUCION - RADIACION LASER IVISIBLE CUANDO SE ABRE.
EVITAR EXPONERSE AL RAYO.

ADVARSEL. - USYNLIG LASERSTR LNING VED BNING, N R
SIKKERHEDSBRYDERE ER UDE AF FUNKTION.
UNDG UDSAETTELSE FOR STR LNING.

ADVARSEL. - USYNLIG LASERSTR LNING N R DEKSEL
PNES. STIRR IKKE INN I STR LEN.
UNNG EKSPONERING FOR STR LEN.

VARNING - OSYNLIG LASERSTR LNING N R DENNA DEL
R PPNAD OCH SP RREN R URKOPPLAD.
BETRAKTA EJ STR LEN. STR LEN R FARLIG.

VARO! - AVATTAESSA JA SUOJALUKITUS OHITETTAESSA
OLET ALTTIINA N KYM TT M LLE LASER-
S TEILYLLE L KATSO S TEESEEN.

注 意 - 严禁渴开此盖, 以免激光泄露灼伤

주 의 - 이 덮개를 열면 레이저광에 노출될 수 있으므로 주의하십시오.

1.2 Caution for safety

1.2.1 Toxic material

This product contains toxic materials that could cause illness if ingested.

(1) If the LCD control panel is damaged it is possible for the liquid inside to leak. This liquid is toxic. Contact with the skin should be avoided, wash any splashes from eyes or skin immediately and contact your doctor. If the liquid gets into the mouth or is swallowed see a doctor immediately.

(2) Please keep toner cartridges away from children. The toner powder contained in the toner cartridge may be harmful and if swallowed you should contact a doctor.

1.2.2 Electric Shock and Fire Safety Precautions

Failure to follow the following instructions could cause electric shock or potentially cause a fire.

(1) Use only the correct voltage, failure to do so could damage the printer and potentially cause a fire or electric shock.

(2) Use only the power cable supplied with the printer. Use of an incorrectly specified cable could cause the cable to overheat and potentially cause a fire.

(3) Do not overload the power socket, this could lead to overheating of the cables inside the wall and could lead to a fire.

(4) Do not allow water or other liquids to spill into the printer, this can cause electric shock. Do not allow paper clips, pins or other foreign objects to fall into the printer these could cause a short circuit leading to an electric shock or fire hazard..

(5) Never touch the plugs on either end of the power cable with wet hands, this can cause electric shock. When servicing the printer remove the power plug from the wall socket.

(6) Use caution when inserting or removing the power connector. The power connector must be inserted completely otherwise a poor contact could cause overheating possibly leading to a fire. When removing the power connector grip it firmly and pull.

(7) Take care of the power cable. Do not allow it to become twisted, bent sharply round corners or other wise damaged. Do not place objects on top of the power cable. If the power cable is damaged it could overheat and cause a fire or exposed cables could cause an electric shock. Replace a damaged power cable immediately, do not reuse or repair the damaged cable. Some chemicals can attack the coating on the power cable, weakening the cover or exposing cables causing fire and shock risks.

(8) Ensure that the power sockets and plugs are not cracked or broken in any way. Any such defects should be repaired immediately. Take care not to cut or damage the power cable or plugs when moving the machine.

(9) Use caution during thunder or lightening storms. Samsung recommend that this machine be disconnected from the power source when such weather conditions are expected. Do not touch the machine or the power cord if it is still connected to the wall socket in these weather conditions.

(10) Avoid damp or dusty areas, install the printer in a clean well ventilated location. Do not position the machine near a humidifier. Damp and dust build up inside the machine can lead to overheating and cause a fire.

(11) Do not position the printer in direct sunlight. This will cause the temperature inside the printer to rise possibly leading to the printer failing to work properly and in extreme conditions could lead to a fire.

(12) Do not insert any metal objects into the machine through the ventilator fan or other part of the casing, it could make contact with a high voltage conductor inside the machine and cause an electric shock.

1.2.3 Handling Precautions

The following instructions are for your own personal safety, to avoid injury and so as not to damage the printer

(1) Ensure the printer is installed on a level surface, capable of supporting its weight. Failure to do so could cause the printer to tip or fall.
(2) The printer contains many rollers, gears and fans. Take great care to ensure that you do not catch your fingers, hair or clothing in any of these rotating devices.
(3) Do not place any small metal objects, containers of water, chemicals or other liquids close to the printer which if spilled could get into the machine and cause damage or a shock or fire hazard.
(4) Do not install the machine in areas with high dust or moisture levels, beside on open window or close to a humidifier or heater. Damage could be caused to the printer in such areas.
(5) Do not place candles, burning cigarettes, etc on the printer, these could cause a fire.

1.2.4 Assembly / Disassembly Precautions

Replace parts carefully, always use Samsung parts. Take care to note the exact location of parts and also cable routing before dismantling any part of the machine. Ensure all parts and cables are replaced correctly. Please carry out the following procedures before dismantling the printer or replacing any parts.

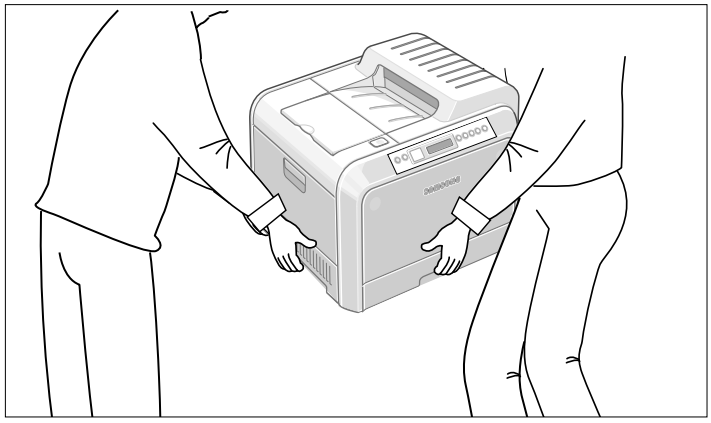
(1) Check the contents of the machine memory and make a note of any user settings. These will be erased if the mainboard or network card is replaced.
(2) Ensure that power is disconnected before servicing or replacing any electrical parts.
(3) Disconnect printer interface cables and power cables.
(4) Only use approved spare parts. Ensure that part number, product name, any voltage, current or temperature rating are correct.
(5) When removing or re-fitting any parts do not use excessive force, especially when fitting screws into plastic.
(6) Take care not to drop any small parts into the machine.
(7) Handling of the OPC Drum
- The OPC Drum can be irreparably damaged if it exposed to light.
  Take care not to expose the OPC Drum either to direct sunlight or to fluorescent or incandescent room lighting. Exposure for as little as 5 mins can damage the surface's photoconductive properties and will result in print quality degradation. Take extra care when servicing the printer. Remove the OPC Drum and store it in a black bag or other lightproof container. Take care when working with the covers(especially the top cover) open as light is admitted to the OPC area and can damage the OPC Drum.
- Take care not to scratch the green surface of OPC Drum Unit.
  If the green surface of the Drum Cartridge is scratched or touched the print quality will be compromised.

1.2.5 Disregarding this warning may cause bodily injury

(1) Take care - some parts may be hot.
The fuser unit works at a high temperature. Use caution when working on the printer. Wait for the fuser to cool down before disassembly.

(2) Take care not to trap fingers or hair.
Take care when using a printer. It contains many rotating parts. Ensure that fingers, hair, clothing etc. do not become caught in the mechanism as this could cause injury.

(3) When you move the printer.
This printer weighs 32kg including toner cartridge and cassette. Use safe lifting and handling techniques. Use the lifting handles located on each side of the machine. Back injury could be caused if you do not lift carefully.



(4) Ensure the printer is installed safely.
The printer weighs 32Kg, ensure the printer is installed on a level surface, capable of supporting its weight. Failure to do so could cause the printer to tip or fall possibly causing personal injury or damaging the printer.

(5) Do not install the printer on a sloping or unstable surface. After installation, double check that the printer is stable.

1.3 ESD Precautions

Certain semiconductor devices can be easily damaged by static electricity. Such components are commonly called “Electrostatically Sensitive (ES) Devices”, or ESDs. Examples of typical ESDs are: integrated circuits, some field effect transistors, and semiconductor “chip” components.

The techniques outlined below should be followed to help reduce the incidence of component damage caused by static electricity.

Caution >>Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

1. Immediately before handling a semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, employ a commercially available wrist strap device, which should be removed for your personal safety reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ESDs, place the assembly on a conductive surface, such as aluminum or copper foil, or conductive foam, to prevent electrostatic charge buildup in the vicinity of the assembly.
3. Use only a grounded tip soldering iron to solder or desolder ESDs.
4. Use only an “anti-static” solder removal device. Some solder removal devices not classified as “anti-static” can generate electrical charges sufficient to damage ESDs.
5. Do not use Freon-propelled chemicals. When sprayed, these can generate electrical charges sufficient to damage ESDs.
6. Do not remove a replacement ESD from its protective packaging until immediately before installing it. Most replacement ESDs are packaged with all leads shorted together by conductive foam, aluminum foil, or a comparable conductive material.
7. Immediately before removing the protective shorting material from the leads of a replacement ESD, touch the protective material to the chassis or circuit assembly into which the device will be installed.
8. Maintain continuous electrical contact between the ESD and the assembly into which it will be installed, until completely plugged or soldered into the circuit.
9. Minimize bodily motions when handling unpackaged replacement ESDs. Normal motions, such as the brushing together of clothing fabric and lifting one’s foot from a carpeted floor, can generate static electricity sufficient to damage an ESD.

1.4 Super Capacitor or Lithium Battery Precautions

1. Exercise caution when replacing a super capacitor or Lithium battery. There could be a danger of explosion and subsequent operator injury and/or equipment damage if incorrectly installed.

2. Be sure to replace the battery with the same or equivalent type recommended by the manufacturers.

3. Super capacitor or Lithium batteries contain toxic substances and should not be opened, crushed, or burned for disposal.

4. Dispose of used batteries according to the manufacturer’s instructions.

MEMO

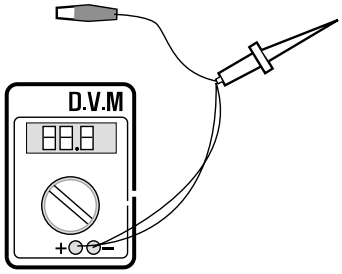
2. Reference Information

This chapter contains the tools list, list of abbreviations used in this manual, and a guide to the location space required when installing the printer. A definition of tests pages and Wireless Network information definition is also included.

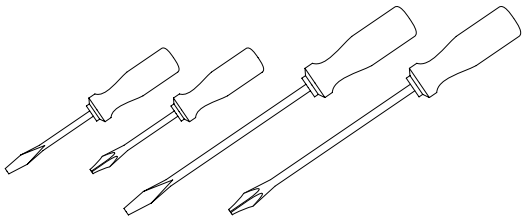
2.1 Tools for Troubleshooting

The following tools are recommended safe and easy troubleshooting as described in this service manual.

- **DVM(Digital Volt Meter)**
  Standard : Indicates more than 3 digits.



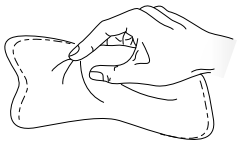
- **Driver**
  Standard : "-" type, "+" type (M3 long, M3 short, M2 long, M2 short).



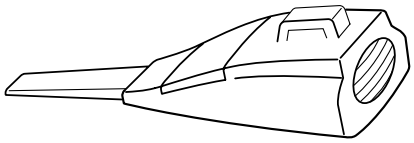
- **Tweezers**
  Standard : For general home use, small type.

- **Cotton Swab**
  Standard : For general home use, for medical service.

- **Cleaning Equipments**
  Standard : An IPA(Isopropyl Alcohol)dry wipe tissue or a gentle neutral detergent and lint-free cloth.

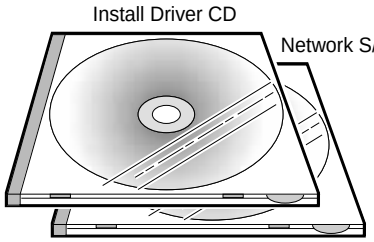


- **Vacuum Cleaner**



- **Brush**

- **Software (Driver) installation CD ROM**



2.2 Acronyms and Abbreviations

The table below explains the abbreviations and acronyms used in this service manual. Where abbreviations or acronyms are used in the text please refer to this table.

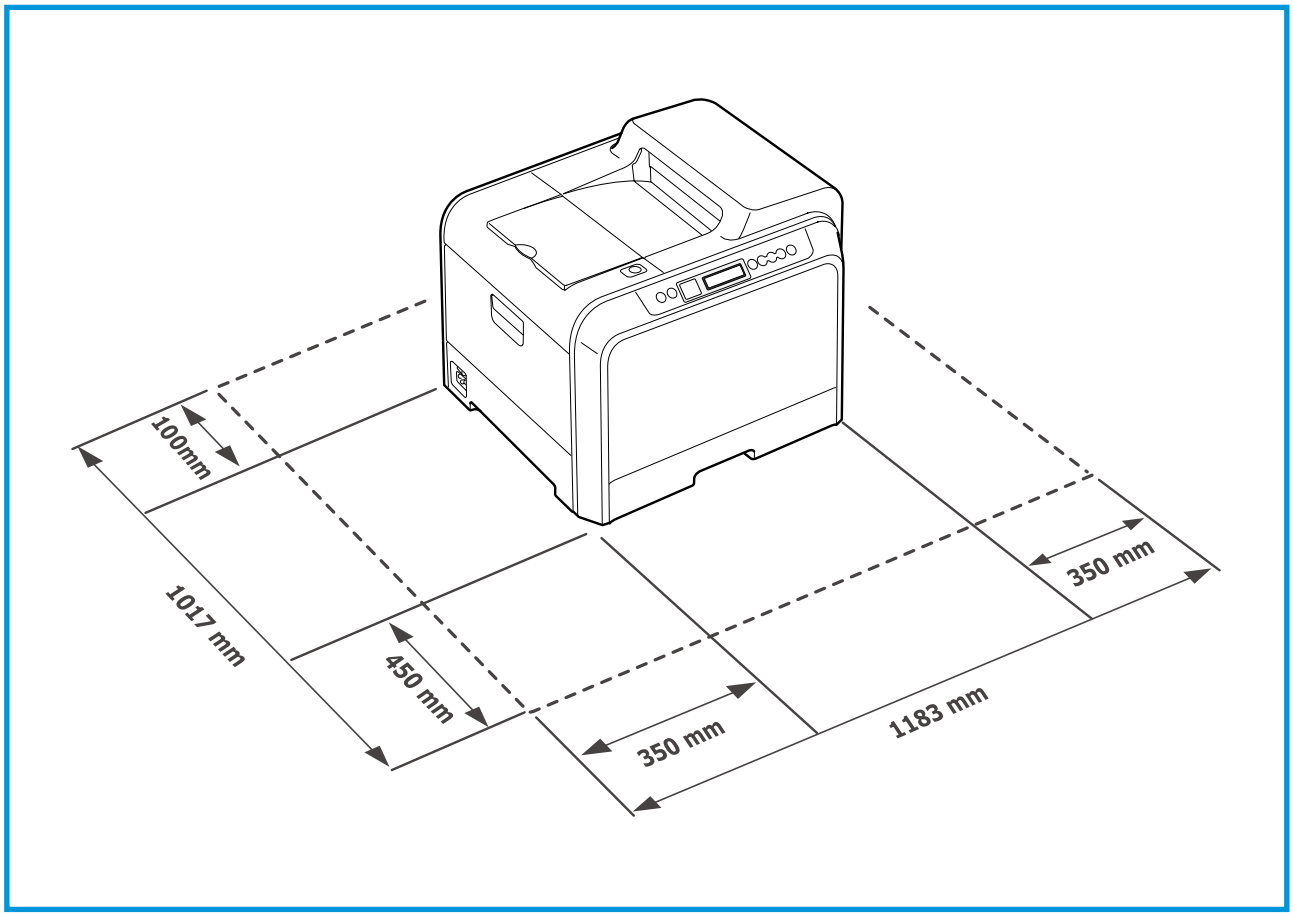
ADC	Analog-to-Digital-Conversion
AP	Access Point
AC	Alternating Current
ASIC Circuit	Application Specific Integrated
ASSY	Assembly
BIOS	Basic Input Output System
BLDC Motor	Brushless DC Motor
CLBP	Color Laser Beam Printer
CMOS	Complementary Metal Oxide Semiconductor
CMYK	Cyan, Magenta, Yellow, Black
CN	Connector
CON	Connector
CPU	Central Processing Unit
CTD Sensor	Color Toner Density Sensor
dB	Decibel
dBA	A-Weighted decibel
dBm	Decibel milliwatt
DC	Direct Current
DCU	Diagnostic Control Unit
DIMM	Dual In-line Memory Module
DPI	Dot Per Inch
DRAM	Dynamic Random Access Memory
DVM	Digital Voltmeter
ECP	Enhanced Capability Port
ECU	Engine Control Unit
EEPROM	Electronically Erasable Programmable Read Only Memory
EMI	Electro Magnetic Interference
EP	Electro photographic
EPP	Enhanced Parallel Port
F/W	Firmware
FCF/FCT	First Cassette Feeder/First Cassette Tray
FISO	Front-In, Side-Out
FPOT	First Print out Time
GDI	Windows Graphic Device Interface
GIF	Graphic Interchange Format
GND	Ground
HBP	Host Based Printing
HDD	Hard Disk Drive
HTML	Hyper Text Transfer Protocol
HV	High Voltage
HVPS	High Voltage Power Supply
I/F	Interface
I/O	Input and Output
lb	Pound(s)
IC	Integrated Circuit
ICC	International Color Consortium
IDE	Intelligent Drive Electronics or Integrated Drive Electronics
IEEE	Institute of Electrical and Electronics Engineers. Inc
IOT	Image Output Terminal (Color printer, Copier)
IPA	Isopropy Alcohol
IPC	Inter Process CommunicationEPP Enhanced parallel Port
IPM	Images Per Minute
ITB	Image Transfer Belt
LAN	local area network
LBP	Laser Beam Printer

LCD	Liquid Crystal Display
LED	Light Emitting Diode
LSU	Laser Scanning Unit
MB	Megabyte
MHz	Megahertz
MPBF	Mean Prints Between Failure
MPF/MPT	Multi Purpose Feeder/Multi Purpose Tray
NIC	Network Interface Card
NPC	Network Printer Card
NVRAM	Nonvolatile Random Access Memory
OPC	Organic Photo Conductor
PBA	Printed Board Assembly
PCL	Printer Command Language , Printer Control Language
PCI	Peripheral Component Interconnect by Intel 1992/6/22, is a local bus standard developed by Intel and introduced in April, 1993 : A60, B60 Pins
PCL5Ce	Printer Command Language 5Ce-Color
PCL6	Printer Command Language 6
PDF	Portable Document Format
PDL	Page Description Language
Ping	Packet internet or Inter-Network Groper
PPD	Postscript Printer Discription
PPM	Page Per Minute
PS	Post Script
PS3	Post Script Level3
PTL	Pre-Transfer Lamp
PWM	Pulse Width Moduration
Q'ty	Quantity
RAM	Random Access Memory
RCP	Remote Control Panel
ROM	Read Only Memory
SCF/SCT	Second Cassette Feeder/Second Cassette Tray
SMPS	Switching Mode Power Supply
SPGP	Samsung Printer Graphic Processor
SPL	Samsung Printer Language
SPL-C	Samsung Printer Language-Color
Spool	Simultaneous Peripheral Operation Online
SRS	Software Requirment Specification
SURF	Surface Rapid Fusing
SW	Switch
sync	Synchronous or Synchronization
T1	ITB
T2	Transfer Roller
TRC	Toner Reproduction Curve
PnP	Universal Plug and Play
U.I.	User Interface
URL	Uniform Resource Locator
USB	Universal Serial Bus
VCCI	Voluntary Control Council for Interference Information Technology Equipment
WECA Alliance	Wireless Ethernet Compatibility
Wi-Fi	Wireless Fidelity

2.3 Select a location for the printer

- Leave enough room to open the printer trays, covers, and allow for proper ventilation. (see diagram below)

- Provide the proper environment :
  - A firm, level surface
  - Away from the direct airflow of air conditioners, heaters, or ventilators
  - Free of extreme fluctuations of temperature, sunlight, or humidity
  - Clean, dry, and free of dust



2.4 A4 ISO 19752 Standard Pattern

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23 January 2004

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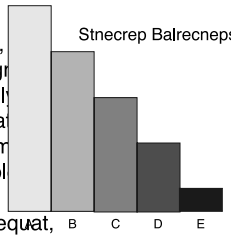

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2.5 Wireless LAN

• This product can be used with a wireless LAN, (this is an option.)
- The wireless LAN function uses radio technology, instead of using LAN cable, to connect to an access point for printing.
- For a wireless LAN connection in Infrastructure mode an AP is needed, (purchased separately)
- For a wireless LAN connection in Ad-Hoc mode an appropriate Wireless I/F card is required fitted to a computer, (purchased separately)
- It is possible to use a wireless LAN connection with wired LAN.
- If an AP is installed in an office or at home, the wireless LAN function can be simply configured and used.

• Types of desk top PC (or Lap top) that uses the wireless LAN.

Division	Basic type	Recommend type
CPU	Over PENTIUM 233M	PENTIUM 300MHz
MEMORY	Over 64MB	Over 128MB
VIDEO CARD	Over 800X600	Over 1024X768
OS	Over WINDOWS 98	Over WINDOWS ME
INTERFACE CARD	A product has a certificated mark of Wi-Fi™	

• About the certificated mark of Wi-Fi™

- Wi-Fi™ is a registered trademark of the WECA (Wireless Ethernet Compatibility Alliance). Over 50 wireless LAN companies are member of this organisation. Most of the main wireless networking companies are attending including such companies as Lucent Technologies, Cisco, Intel/Symbol, 3Com, Enterasys (Cabletron), Compaq, IBM, Nokia, Dell, Philips, Samsung Electronics, Sony, Intersil, etc.. This mark certifies mutual compatibility amongst the product of these companies. Wi-Fi™ (IEEE 802.1) is certified as a standard of the wireless LAN market.

3. Specifications

Specifications are correct at the time of printing. Product specifications are subject to change without notice. See below for product specifications.

3.1 General Specifications

Items	Descriptions	
Print Method	Non-impact Electro-photography	
Developing system	Non-Magnetic, Mono-Component Developing System	
*Print Speed	Mono	Up to 24 PPM in A4, Up to 25 PPM in Letter size
	Color	Up to 6 PPM in A4, Up to 6 PPM in Letter size
Resolution	Up to 1200 DPI effective output, True 600 X 600dpi	
Source of Light	Laser diode (LSU : Laser Scanning Unit)	
Warm-Up Time	More than 99 sec	
First Print Time	Mono	15 seconds (Ready to 1st page out)
	Color	24 seconds (Ready to 1st page out)
Feed Method	Cassette , MPT(Multi Purpose Tray), SCT(Second Cassette Tray)	
Media Size	76 X 128mm (3 x 5”) to 216 X 356mm (8.5 X 14”)	
Media Thickness	Cassette : 16 ~24 lb , MPT : 16 ~ 43 lb	
Dimension (W X D X H)	510 X 470 X 405 mm	
Weight	Net	25.5 Kg 56.2Lbs
	Gross	32.0 Kg 70.5Lbs
**Acoustic Noise	Stand by	More than 40 dBA-TBD
	Printing	More than 48 dBA (Color)-TBD
Power save mode	Available, Setting : 5min/10min/15min/30min/45min/60min/120min	
Toner save mode	Disable	
Machine Life	Mono : More than 300,000 pages, Color : More than 75,000 pages	

* Print speed will be affected by Operating System used, computing performance, application software, connecting method, media type, media size and job complexity.

* Cardstock/Envelope : Half Speed

** Sound Pressure Level, ISO 7779

3.2 Controller Specification

Items	Descriptions
Processor (CPU)	Samsung SPGPm (CLOCK SPEED 120Mhz), 32-bit RISC core (ARM 946ES)
Memory	FLASH ROM (PROGRAM) : 8MB flash
	*RAM : 64MB (Expandable to 320MB : With Option
	Option DIMM module : 64/128/256MB
	100Pin SDRAM DIMM (Samsung Printer Only)
	EEPROM (NVRAM) : 1024bytes
Emulation	SPL-Color
Operating System	Win 95/98/ME/NT4.0/2000/XP, Various Linux OS including Red Hat, Caldera, Debian, Mandrake, Slackware, SuSE and Turbo Linux
Interface	Parallel : IEEE 1284 Bidirectional (Korea, Russia, Asia only) - Modes supported : Compatible, Nibble, Byte, ECP
	USB (without HUB mode) - USB 2.0 compliant -12/480 Mbps 1 port
	Network Interface - 10/100 Base TX 10/100 Base TX + 802.11b Wireless LAN
Interface switching	Automatic
Interface time-out	5min (Max.)
Font	Windows font, PS english font, PCL english font
Color Management	ICC ICM V3.4

** Memory Slots : Standard Capacity is 64MB Option Capacity is 320MB (Max) (100Pin 1 slot, 64MB/128MB/256MB)*

3.3 Electrical Specification

Items	Descriptions		Remarks
Input Voltage	Nominal input voltage	200-240 VAC / 100~127VAC	
	Input voltage range	180-264 VAC/ 90~132VAC	
	Nominal frequency	50/60 MHz	
	Frequency tolerance	+3Hz	
Power Consumption	Printing :450W max (with SCF)		
	Power Save : 35W max		

3.4 Environmental Range

Items	Operating		Storage
Temperature	15~32.5 ˚C(50-90 ˚F)	-20~40 ˚C (-4~104 ˚F)	
Humidity	20~80%RH	10~80%RH	

3.5 Consumable & Maintenance Items

Items	Descriptions		Remarks
Periodic Replacing Parts	Toner Cartridge(Black)	initial (3,000 pages@5% coverage)	User replace
		replacement (7,000 pages@5% coverage)	
	Toner Cartridge(Cyan)	initial (2,000 pages@5% coverage)	User replace
		replacement (5,000 pages@5% coverage)	
	Toner Cartridge(Magenta)	initial (2,000 pages@5% coverage)	User replace
		replacement (5,000 pages@5% coverage)	
	Toner Cartridge(Yellow)	initial (2,000 pages@5% coverage)	User replace
		replacement (5,000 pages@5% coverage)	
	OPC Unit	mono : 50,000 pages	User replace
		color : 12,500 pages	
	ITB Unit(T1 Roller)	mono : 50,000 pages	User replace
		color : 12,500 pages	
	Waste Toner Tank	3,000 images	User replace
	Fuser Unit	simplex : 100,000 page (Mono) / 50,000 page (Color)	Engineer
		duplex : 50,000 page (Mono) / 25,000 page (Color)	
	Transfer Roller(T2 Roller)	simplex : 50,000 page	Engineer
		duplex : 25,000 page	
Option	SCT (Second Cassette Tray)	- Paper capacity : 500sheets	
		- Paper weight : 60 ~ 90 g/m^2 / 16 ~ 24 lbs	
	Network Printing	- Ethernet 10/100baseTX + Wireless	
		- Protocols : TCP/IP, SPX/IPX, Ethertalk, SNMP, HTTP 1.1, DLC/LLC	
		- 8MB RAM Buffer for faster graphics performance	
		- 4MB Flash Memory for upgrade	
	802.11b Wireless LAN	- IEEE802.3b support	
		- speed : 11, 5.5, 2 ,1Mbps	
		- WEP : 64bit, 128bit	
		- Operating range : 30m(Indoors) , 100m(Outdoors)	
	SDRAM DIMM	- 64,128MB, 256MB 100Pin SDRAM DIMM(Use Samsung Part Only)	

3.6 Paper handling Specifications

3.6.1 input Paper Size

Paper	Paper size	1st Cassette	2nd Cassette	MP tray	Duplex
A4	210 X 297 mm	O	O	O	O
Letter	216 X 279 (8.5 X 11")	O	O	O	O
Folio (Legal13")	216 X 330 (8.5 X 13")			O	O
Legal (Legal14")	216 X 356 (8.5 X14")			O	O
Executive	184 X 267 (7.25 X10.5")			O	
Statement	140 X 216(5.5 x8.5")			O	
ISO B5	176 X 250			O	
JIS B5	182 X257			O	
A5	148.5 X 210			O	
A6	105 X148.5			O	
Com-10 Envelope	105 X 241 (4.15 X 9.5")			O	
Monarch Envelope	98 X191 (3.87 X 7.5")			O	
DL Envelope	110 X 220(4.33 X 8.66")			O	
C5 Envelope	162 X 229 (6.38 X 9.01")			O	
C6 Envelope	114 X 162 (4.49 X 6.38")			O	
Transparency (OHP)	A4 or Letter			O	
Label paper	A4 or Letter			O	

O : Supported

3.6.2 Input Capacity

Items	Descriptions		Remarks
Cassette(FCT)	250 sheets		
MP tray	Paper	100 sheets	
	Transparencies	30 sheets	
	Envelopes	10 sheets	
	Labels	10 sheets	
Option Cassette(SCT)	500 sheets		

3.6.3 Output Capacity

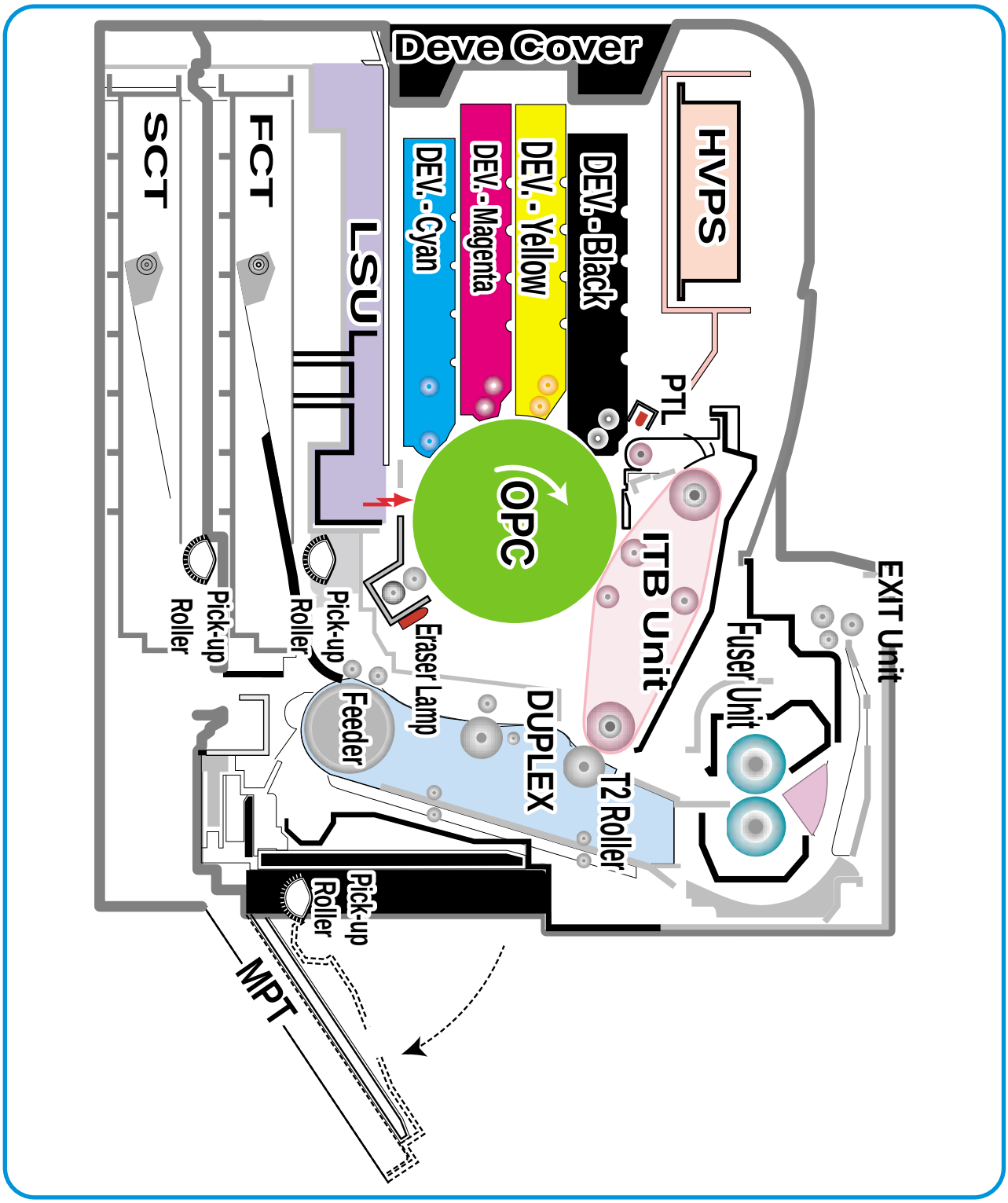
Items	Descriptions	Remarks
Face Down	250 sheets	

4. Summary of Product

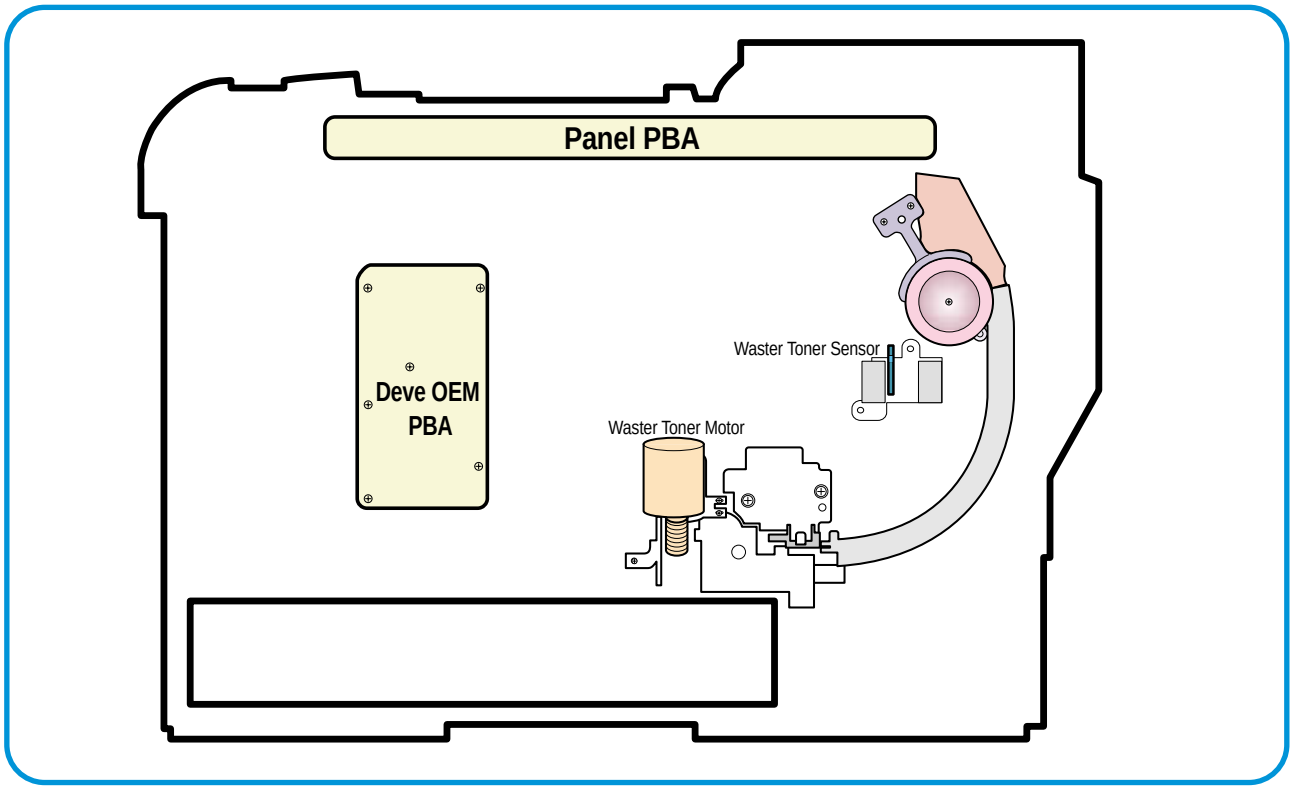
This chapter describes the functions and operating principles of the main components.

4.1 System Structure

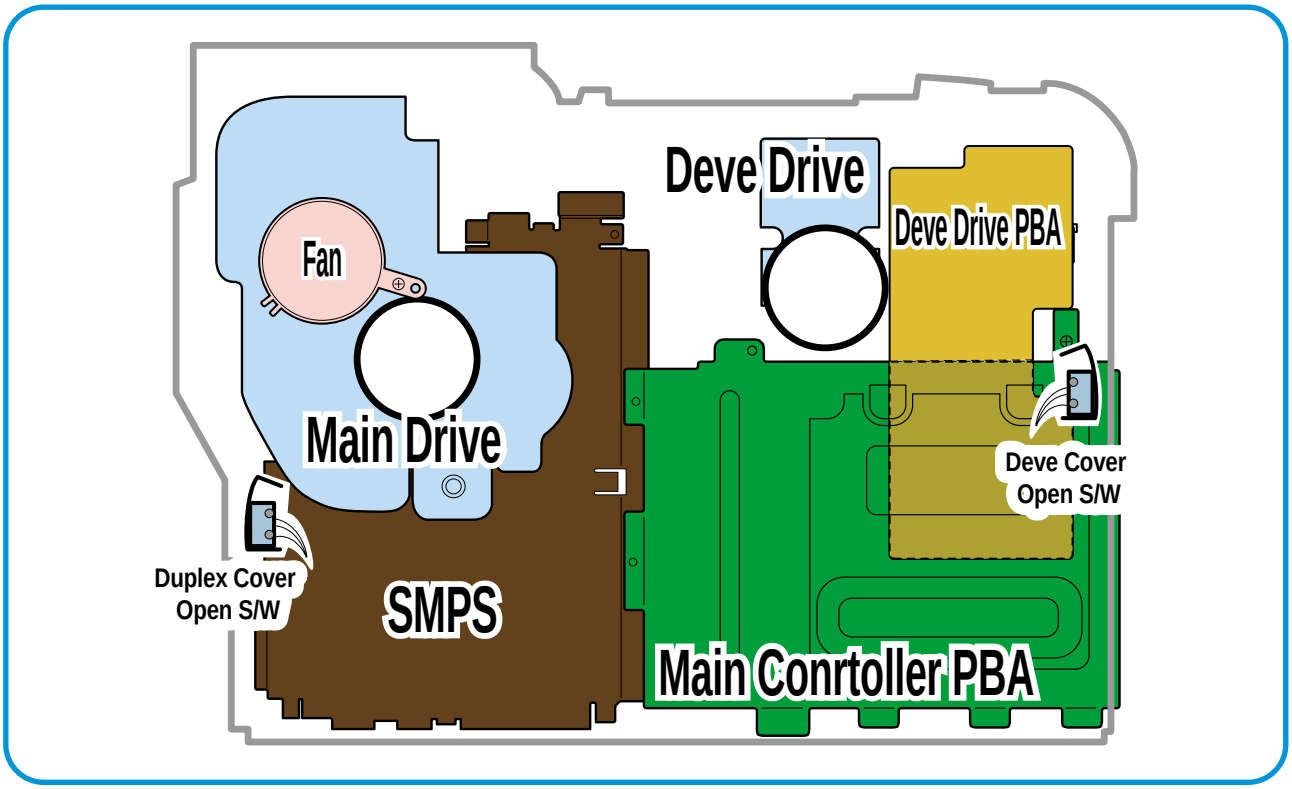
4.1.1 Main Parts of System



>> Front View



>> Rear View



1) OPC Unit

Images are created on the OPC unit using an electro-photographic process. The unit consists of:-
* OPC Drum
* Waste Toner Ass'y used to collect waste toner remaining on the OPC drum,
* Charge Roller Assy

2) ITB Unit

ITB stands for Image Transfer Belt. An image developed on the OPC Drum is transferred first to the ITB. This is called the T1 Transfer (Primary Image Transfer).
Images are built up in layers on the ITB.
First the Yellow (Y) colour image is created on the OPC and transferred to the ITB
Next the Magenta (M) colour image is created on the OPC and transferred to the ITB
Followed by the Cyan (C) and Black (K) images.

3) Transfer Roller

Once the complete, full colour, image, has been built up on the ITB the Transfer Roller is used to transfer the image onto paper. This is called the T2 Transfer (Secondary Image Transfer)

4) FCT (First Cassette Tray)

It stores and automatically feeds print paper.

Pick-up Roller picks up paper, controls drive, feeds paper, removes static electricity, and so on.

> Spec.

* Paper arrange way : Side Registration
* Paper Direction : FISO (Front-in, Side-Out)
* Cassette Type : A4, Ltr
* Paper Discharge : Separation Claw
* Capacity : 250 Sheets (Standard paper 75mg/m? 20lb)
* Paper Size : A4, Letter
* Paper Weight (average) : 60~90g/m^2 (16~24lbs)
* Paper Type : General Printing Paper
* Additional Function : Paper Empty Sensor

5) SCT (Second Cassette Tray)

This additionally stores and automatically feeds printing paper. Its function is the same as the FCT (First Cassette Tray)

> Spec.

* Paper arrangement : Side Registration
* Paper Direction : FISO (Front-in, Side-Out)
* Cassette Type : A4, Ltr
* Paper Discharge : Separation Claw
* Capacity : 500 Sheets (Standard paper 75mg/m^2 20lb)
* Paper Size : A4, Letter
* Paper Weight (average) : 60~90g/m^2 (16~24lbs)
* Paper Type : General Printing Paper
* Additional Function : Paper Empty Sensor

6) MPT (Multi Purpose Tray)

The Multi-Purpose Tray not only feeds general printing paper but is also used for many other kinds of paper such as those paper sizes not supported by the cassette, envelopes, OHP, etc.

> Spec.

* Capacity : Cut Sheet : 100 Sheets (Standard paper 75mg/m^2 20lb)
* OHP : 300 Sheets
* Envelope & Label & Card Stock : 10 Sheets
* Paper Arrangement : Side Registration
* Power : Main Motor (BLDC)
* Driving Management : Solenoid
* Paper Discharge : Friction Pad Method
* Paper Size : Legal, Folio, A4, Letter, Executive, JIS B5, A5, A6
* Paper Weight (Average) : 60~163g/m^2
* Paper Type : General, Label, Post Card, Transparency, Envelope, Card Stock (Tracing Paper is not served)
* Additional Function : Paper Empty Sensor

7) Feeder

* Paper Arrangement : Side Registration.
* Power : Main Motor (BLDC)
* Paper Management : Solenoid

8) Duplex Unit

The Duplex Unit is used to reverse feed paper when printing on the second side (known as Double sided or Duplex printing). The Duplex Unit is not an optional extra, it is built-in at manufacturing time and is integral with the Transfer Roller.

> Spec.

* Power : Main Motor (BLDC)
* Paper Reverse Function: After the front side of the original document is printed, it is transferred to the duplex unit in order to print the reverse side of original document. The motor drives the exit roller in the reverse direction to feed the paper back into the machine.

9) Exit Unit

The Exit Unit guides paper that is just about to leave the print engine. Printed-paper is discharged by the Exit Roller and Kicker into the Output Tray.

> Spec.

* Capacity : 250 sheets (Standard A4, 75g/m2)
* Paper Direction : Face Down
* Exit Drive Roller : It is driven by Main Motor (BLDC), and it rotates clockwise for normal feed and antic-clockwise when reverse feeding for duplex printing.
* Bin Full Sensor : There is no Bin Full sensor fitted on this model.

10) Toner Cartridge

There are four toner cartridges, each containing a different colour ink : C (Cyan), M (Magenta), Y (Yellow) , and K (Black).
Each one of these toner cartridge is independent and can be changed independently.

11) Fuser Unit

This unit consists of 2 Heat Lamps, 2 Heat Rollers, 2 Thermostats and a Thermistor. It melts and fuses the toner, transferred by the transfer roller onto the paper, by applying pressure and high temperature to complete printing job.

12) LSU

This is a core part of LBP. It forms a latent image on the surface of OPC drum using a static charge.

* Resolution: Real 600 dpi

13) Main Drive Unit

This motor drives, by way of a gearbox, the OPC unit, ITB unit, feeder unit, fuser unit, exit unit and duplex unit.

> Spec.

* Power : 20W Max (24V)
* Drives : OPC unit, ITB unit, Fuser, Feeder, Duplex unit, Exit unit

14) DEVE Drive Unit

This motor drives, by way of a gearbox, the toner cartridges and ITB cleaning cam.

> Spec.

* Power : 20W Max (24V)
* Drives : DEV (4 Color)/ITB Cleaning)

15) SMPS (Switching Mode Power Supply)

This power supply uses the AC supply voltage to generate the DC voltages used by the system. The SMPS has 4 output channels (+3.3V, +5V, +24V, +24VF).
The AC Heater Control Unit that supplies power to the fuser is also located on the SMPS.

16) HVPS (High Voltage Power Supply)

The HVPS creates the high voltages (Charger, Supply, T1, T2, Developer) used for the electro photographic process. The high voltage is created from the 24V line from the SMPS. High Voltage output is supplied to the toner cartridge, OPC drum unit, ITB unit, and Transfer roller.

17) Main Controller PBA

The Main controller PBA is very important as it is the heart of printer. It has several major function blocks.

* CPU and SPGPm Block: This manages the printing order from the host, creates bitmap data for the engine to print and controls various devices that are needed to operate the printer.
*Engine Control Block: This manages images and controls various kinds of I/O
* Memory Block : The operating system uses this to store video data and printing orders given by host.
* ROM Block : The printer OS and PDL Interpreter are stored here.
* In addition there are USB 2.0 Block, IEEE 1284 Block, Option Block, OPE Panel, etc.

18) DEVE Drive PBA

Each toner cartridge requires the HV Supply only when that colour image is being processed. This unit takes its HV source from the HVPS and using 4 solenoids selects which cartridge is to receive the Supply voltage. This section also contains the DEVE motor, DEVE clutch, and DEVE solenoid drives. These are activated in sequence as required by the printing process.

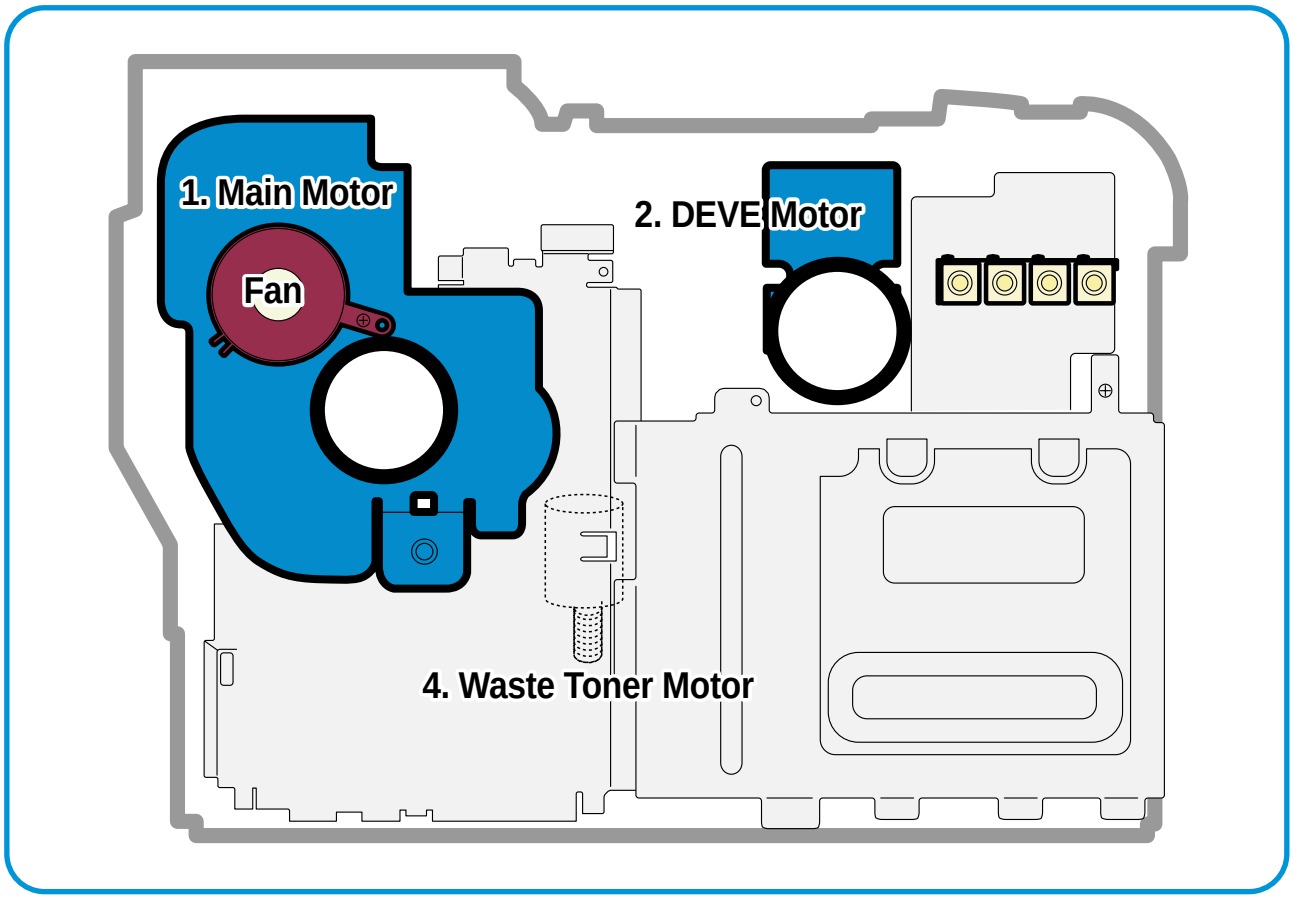
19) DEVE OEM PBA

This detects new or used toner cartridges and also checks that cartridges are approved parts. If a toner cartridge is not suitable for the machine an error message is displayed.

20) Waste Toner Ass'y

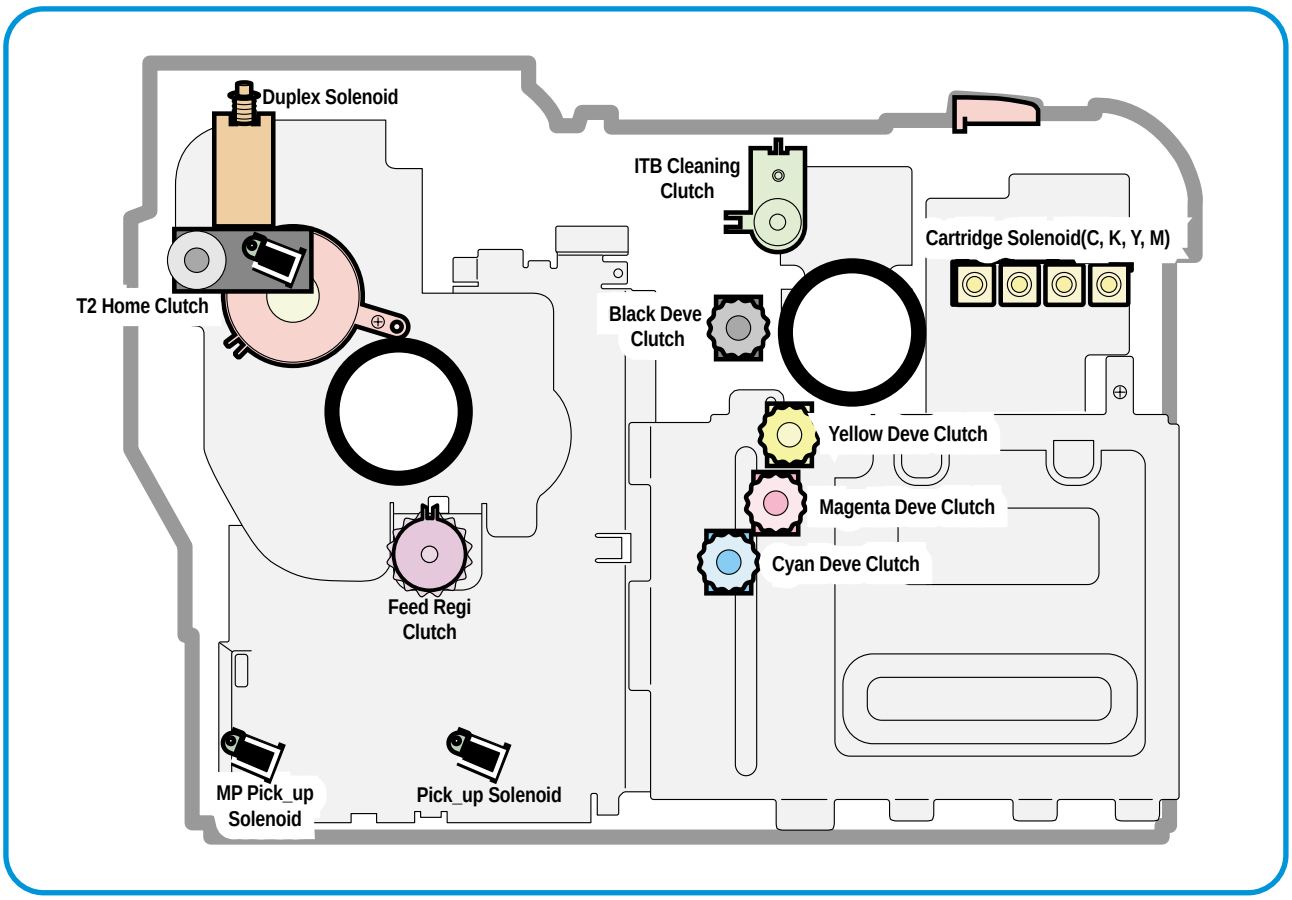
A cleaner blade on the OPC unit cleans waste toner from the OPC drum after every image is transferred to the ITB. Once the complete image is transferred from the ITB onto paper the ITB Cleaning Solenoid activates and a cleaning blade removes waste toner from the ITB. Waste toner is transferred to the waste toner tank.
The error message "Waste Toner Tank Full/ Not Install" is indicated on the LCD Panel. Replace the Waste Toner Tank immediately or the printer may be damaged

4.1.2 Motor & Fan Layout



NO.	Name	Description
1	Main Motor	Drives the OPC unit, ITB unit, feeder unit, fuser unit, exit unit and duplex unit.
2.	DEVE Motor	Drives C, M, Y and K toner cartridges and ITB cleaning cam.
3.	Fan	Forces cold air into the printer and takes out heat from the fuser.
4.	Waste Toner Motor	Transfers collected waste toner from the OPC drum and ITB to the waste toner tank. (Refer to front view picture on 4-2 page)

14.1.3 Clutch & Solenoid Layout



>>Solenoid

NO.	Name	Description
1.	C DEVE solenoid	Controls the High Voltage supply to the cyan cartridge.
2.	K DEVE solenoid	Controls the High Voltage supply to the black cartridge.
3.	Y DEVE solenoid	Controls the High Voltage supply to the yellow cartridge..
4.	M DEVE solenoid	Controls the High Voltage supply to the magenta cartridge.
5.	Pick-up solenoid	Controls the pick-up roller drive.
6.	MP Pick-up solenoid	Controls the MP pick-up roller drive.
7.	Duplex solenoid	When operating in duplex print mode, this reverses the direction of paper feeding to feed paper into the duplex unit.
8.	T2 Home clutch	This forces the transfer roller into contact with the ITB unit.
9.	ITB cleaning solenoid	This brings the cleaning blade into contact with the ITB unit

>>Clutch

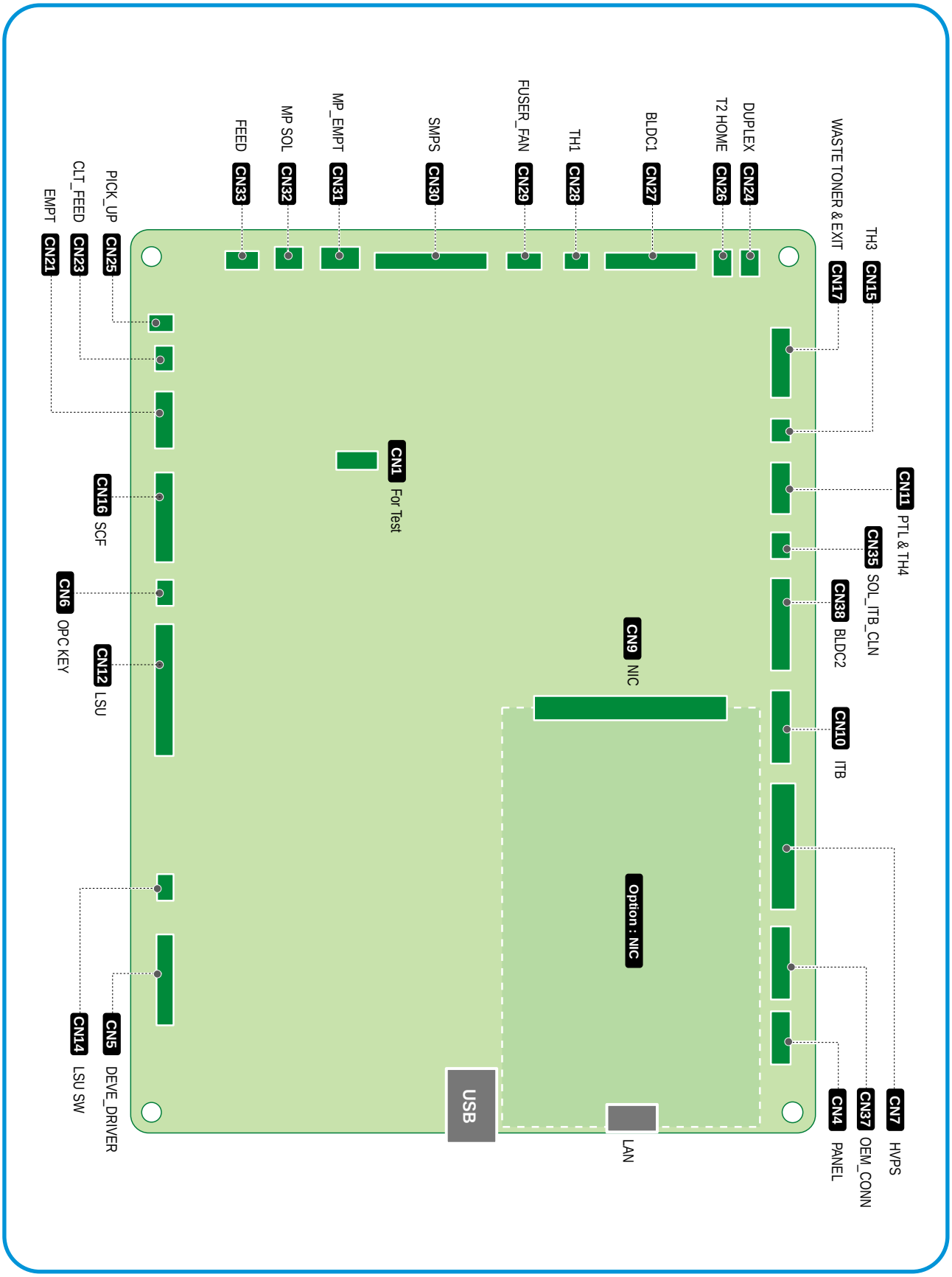
NO.	Name	Description
1.	Yellow DEVE clutch	Controls Yellow color toner cartridge drive
2.	Magenta DEVE clutch	Controls Magenta color toner cartridge drive
3.	Cyan DEVE clutch	Controls Cyan color toner cartridge drive
4.	Black DEVE clutch	Controls Black color toner cartridge drive
5.	Feed Regi. Clutch	Controls the location of picked-up paper

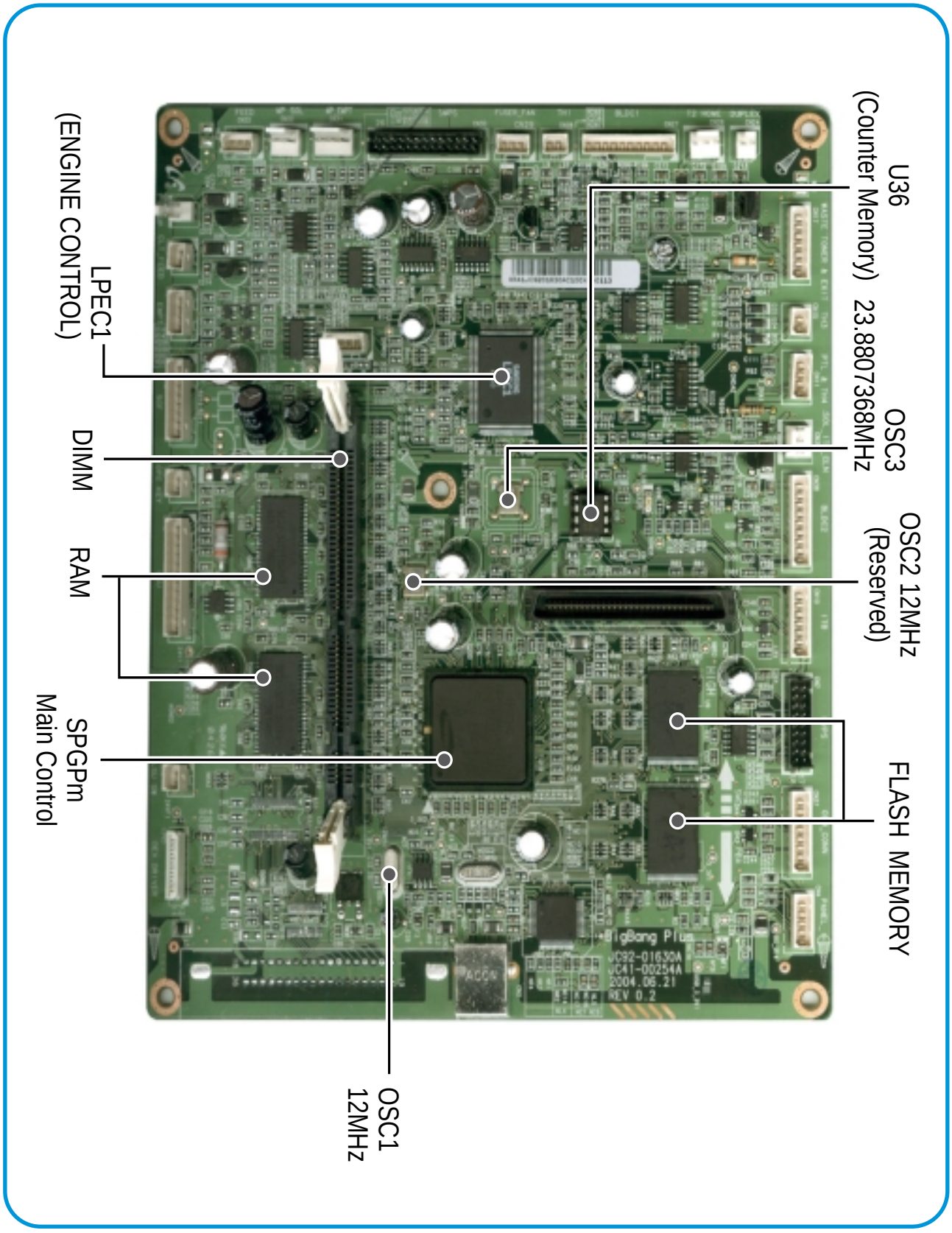
4.1.4 Sensor & Micro S/W Layout

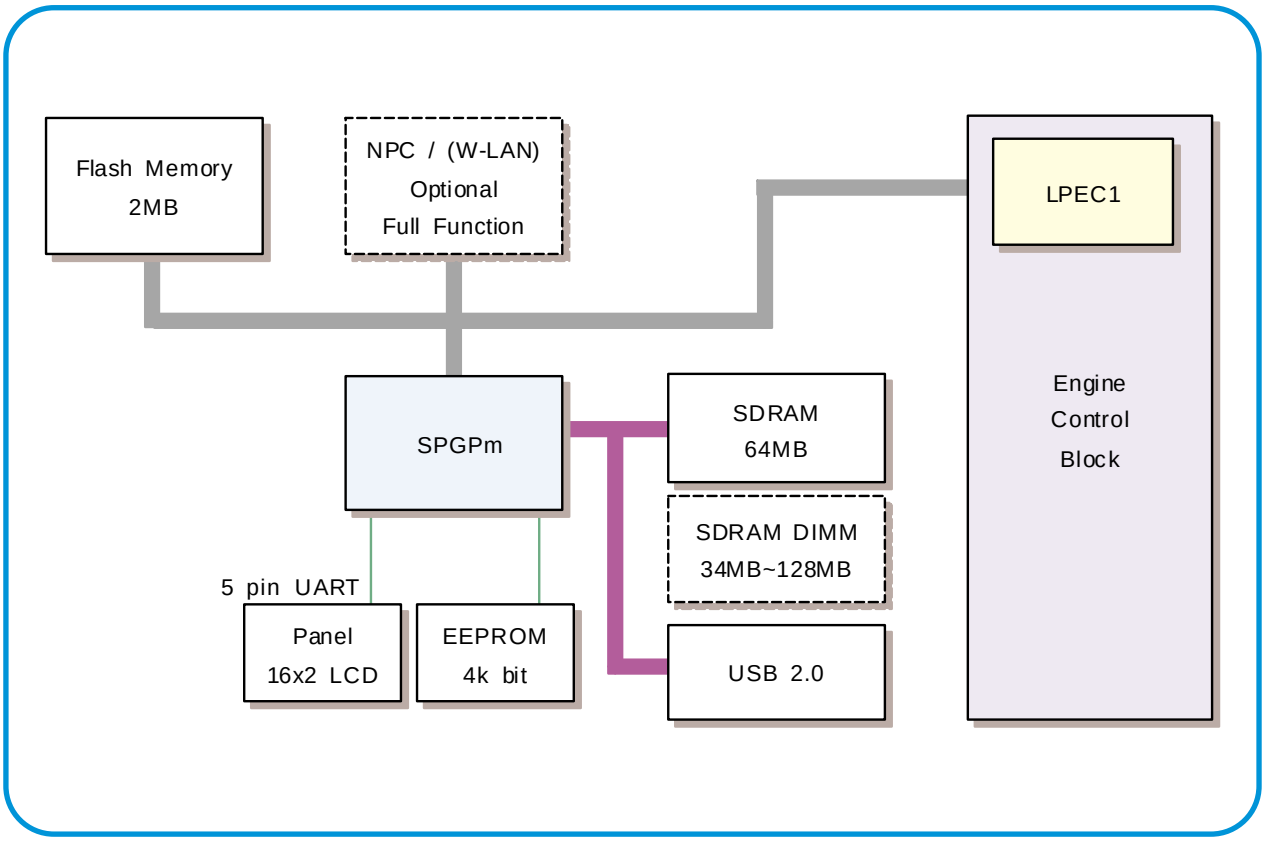
NO.	Name	Description
1.	Paper Empty Sensor(FCT)	This sensor detects paper in the first (main) cassette.
2.	Paper Empty Sensor(SCT)	This sensor detects paper in the second (optional) cassette.
3.	Paper Empty Sensor(MPT)	This sensor detects paper in the multi-purpose tray.
4.	Feed Sensor	This sensor must operate within a certain time after paper pick-up otherwise a JAM is detected
5.	ITB Home Sensor	This detects the position of the image transfer belt, and in dicates the start location for image writing. It is used to ensure that all 4 colour images are correctly registered.
6.	Waste Toner Sensor	This detects whether the waste toner tank is mounted or not and the amount of waste toner in the tank.
7.	Exit Sensor	This detects whether printing paper is discharged or not.
8.	DEVE Cover Open S/W	This detects the open/closed status of the DEVE Cover.
9.	Duplex Cover Open S/W	This detects the open/closed status of the Duplex Cover.

Note: ** ITB Home Sensor is located in the ITB unit. If it develops a fault replace the ITB unit.*
** Please, refer to the Chap. 7 Arrangement and Adjustment, "Paper Path diagram", for the location of the paper empty sensor, feed sensor, and exit sensor.*
** Please, refer to page 4-2 for the location of the waste toner sensor, DEVE cover open S/W, and duplex cover open S/W.*

4.1.5 Main Controller PBA




U36
(Counter Memory)
LPEC1
(ENGINE CONTROL)
23.8807368MHz
OSC3
DIMM
OSC2 12MHz
(Reserved)
RAM
FLASH MEMORY
SPGPm
Main Control
OSC1
12MHz



1) CPU BLOCK

This is the heart of the machine. A 120MHz - 32bit RISC processor is used to manage commands and data supplied by the host. This is converted into a bitmap image which is passed to the engine block for printing. The CPU is also used to control various other devices e.g. the USB 2.0 Interface chip.

2) SPGPm overview

*** Package**

- 272 pins PBGA

* Po**wer**

- 1.8V(Core), 3.3V(IO) power operation
- P1284 inputs : 5V tolerant

*** Speed**

- 120MHz core(ARM946ES) operation, 60MHz bus operation
- Supportable Engine Speed : under 30ppm

*** Dual bus architecture for bus traffic distribution**

- AMBA High performance Bus (AHB)
- System Bus with SDRAM

*** Integrated ARM946ES**

- 32-bit RISC embedded processor core
- 16KB instruction cache and 16KB data cache
- No Tightly Coupled Memory
- Memory Protection Unit & CP15 control program

*** Direct connection up to 4 Flash ROM banks**
- Burst capability
- Programmable timing per bank
- Up to 16MB address per bank (Limited to 8MB per bank when nDREQ0 is enabled)

*** Direct connection up to 6 I/O banks & 4 DMA I/O banks**
- Programmable timing per bank
- Programmable recovery timing per bank for slow devices
- Up to 16MB address per bank (Limited to 8MB per bank when nDREQ0 is enabled)

*** Direct connection up to 5 SDRAM arrays**
- SDRAM controller supports PC-66, PC-100 and PC-133 SDRAMs running at 60MHz
- Up to 128MB per array, up to 512MB totally
- Wide support of various SDRAM configurations, including programmable band and column address
- Programmable SDRAM refresh time interval

*** 4 General Purpose DMA controllers**
- Extensible architecture allows peripheral devices such as scan devices to have access to SDRAM arrays through DMA channels
- 8bits, 16bits and 32bits Data Transfer Modes are supported
- IO to Memory, Memory to IO, Memory to Memory transfer support

*** IEEE1284 compliant parallel port interface**
- Compatible ECP communications are supported
- Direct support for IEEE1284 compliant data transceivers

*** RSH**
- Fully Hardware Rotator, Scaler and Halftoner support
- Variable Image Scaler and Image Halftoning Unit for PCL6
- Pattern & Gamma Table Memory : 1024 x 8, 256 x 8 x 4

*** Graphic Execution Unit for Banding support of Printer Languages**
- Support up to 256 Bit Block Transfer
- Scan Line Transfer
- Polygon Filling
- Enhanced Graphic Order

*** Compression / Decompression**
- CODEC : Simplified JBIG algorithm for band compression / decompression
- HCT : Halftone Compression Technology (Byte Run-Length Type)
- Independent use of both Codec, but enabling only one Codec is desirable for bus traffic

*** UART**
- 3 Independent Full Duplex UART channels
- Max 16 bytes FIFO to handle SIR Bit Rate Speed
- DMA support for RX and TX of Channel0

*** Printer Video Controller for LBP engines**
- 20MHz video rate are targeted
- Two different kinds of Printer Video Controller (Selected by Software)
  - PVC : Printer Video Controller without RET Algorithm
  - HPVC : Printer Video Controller with RET algorithm
    (Line Memory & Lookup Table Memory : 512 x 8 , 4096 x 16)
- High performance DMA based Interface to Printer Engine

- Engine Controller
- Motor Control Unit
  - Motor Speed Lookup Table Memory (128 x 16 x 2)
- Pulse Width Modulation Unit
  - 4 Channels are supported
- ADC Interface Unit
  - 3 ADC Channels are available
  - ADC Core (ADC8MUX8) maximum clock frequency : 3 MHz
  - Coversion time : 4.3us (@3MHz)
- LSU Interface Unit

*** Timer**
- 3 Independent Programmable Timers
- Watch Dog Timer for S/W Trap and Tone Generator for MFP Application

*** Up to 5 External Interrupts support**
- High active interrupt signals
- FIQ/IRQ Interrupt mode selectable

*** Ethernet Controller (MAC)**
- Full compliance with IEEE standard 802.3, 802.3u specification
- Support 10/100 Mbps data transfer rates
- DMA engine with burst modes (4 words burst and 8 words burst are supported)

*** USB 2.0 interface**
- USB 1.1 backward compatible
- UDC(USB Device Controller) block and USB Physical block are integrated
- Both of High Speed(480Mbps) and Full Speed(12Mbps) are supported
- 2 DMA channels support : one RX Channel and one TX Channel
- Interrupt transfer support up to 6 Endpoints
- EP0 In/Out (Control transfer), EP1 In/Out (Bulk transfer), EP2 In/Out (Bulk transfer)

*** Debug support**
- Only MultiICE logic support from ARM9 series
- 5 JTAG connections : TCK, TnRST, TMS, TDI, TDO
- Internal logic for synchronizing TCK and high speed CLK
- Maximum TCK frequency : 20MHz (CLK x 1/6)

3) Memory Block

The operating program runs from memory (see below). It is used to store video data and printing jobs from the host. Standard factory fitted memory is 64MB, and can be expanded using a DIMM module mounted in the SODIMM connector. This is a user fit option, DIMMs from 64Mb - 256MB can be used giving a total of up to 320MB of memory. DIMM modules are non standard - only Samsung product should be used.
The memory controller is located in the SPGPm controls the SDRAM memory connected using a 32 bit 60 MHz bus.

4) ROM Block

An 8MB flash ROM is used to store the OS. The ROM controller is contained in the SPGPm processor. When initializing after power on the contents of ROM are downloaded into memory and the OS is run from within memory.

5) USB 2.0 Block

A Netchip Co. NET2270 is used to provide support for USB2.0 and is capable of interface speeds up to 480Mbps. Under control of the SPGPm chip DMA is used to transfer incoming data directly into memory.

6) IEEE 1284 Block - Korea, Russia and Asia Only

An IEEE 1284 controller is controlled directly by the SPGPm processor. ECP mode is supported.

7) Option Block

An Ethernet card can be attached using the 100 pin connector. It is connected directly to the SPGPm processor and communicates using a 16bit bus.

8) OPE Panel

The OPE panel is controlled by a UART Block located in the SPGPm and it displays printer status and helps the user to setup the printer. Various data is transferred using a serial interface between a Mycom located in the OPE panel and the UART in the SPGPm.

9) Memory

There are two types of memory, program memory that uses flash and a working memory that uses SDRAM. When printing working memory is used as band memory.

10) Sensor

Various sensors are used to detect various conditions during the printing process. These include paper empty sensor, feed sensor, exit sensor, ITB sensor, etc.

11) Actuator Control

This section drives the various motors and clutches that are required for the paper feed and printing process. These include DEVE cartridge clutches (4 off), Feed Regi clutch, DEVE solenoids (4 off), Pick solenoids (2 off), Duplex solenoid, ITB and T2 solenoids.

12) ADC

Recognize the current of T1/T2 roll, Recognize the fusing temperature, Recognize the Waste Toner tank, Recognize the current of Waste agitator DC Motor,Recognize the OPC/ITM key, Recognize the Developer(Y.M.C.K) key, Recognize the set temperature.

4.1.6 SMPS (Switching Mode Power Supply) PBA

The SMPS unit supplies DC power for driving the whole system, it also contains an AC heater control unit that supplies power to the fuser.

1) DC output

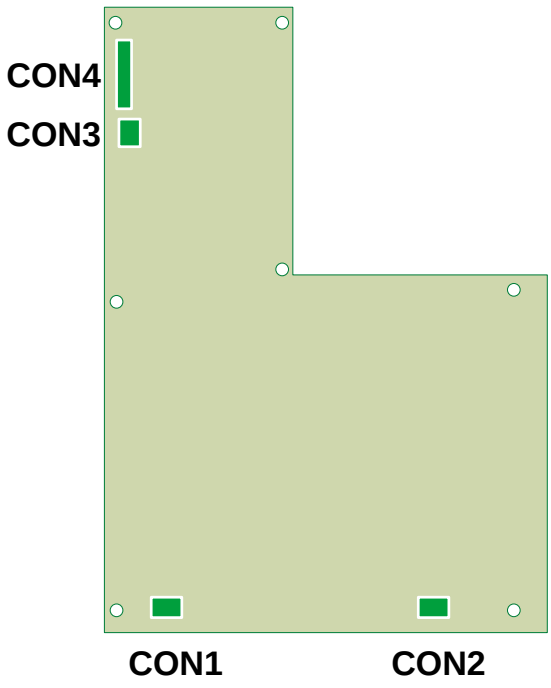
- Main controller PBA, OP panel, SCF, Developer driver PBA

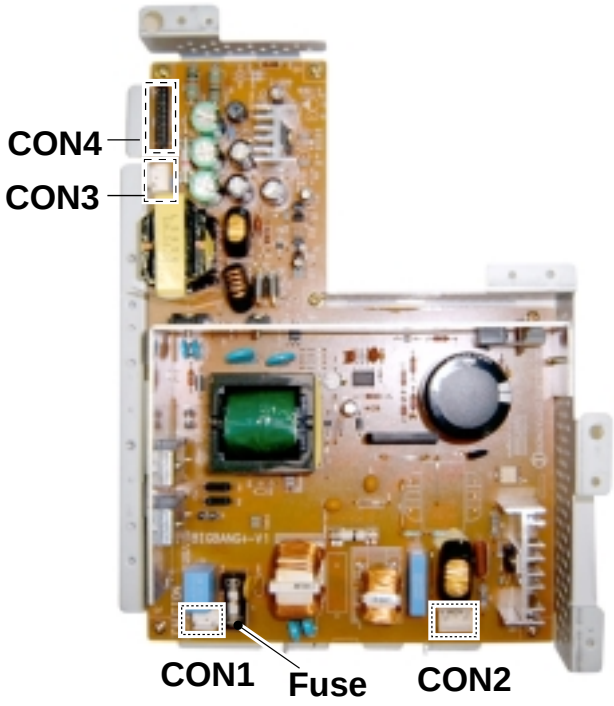
2) AC output

-Fuser unit (Heat lamp, Thermostat)

3) Output voltage

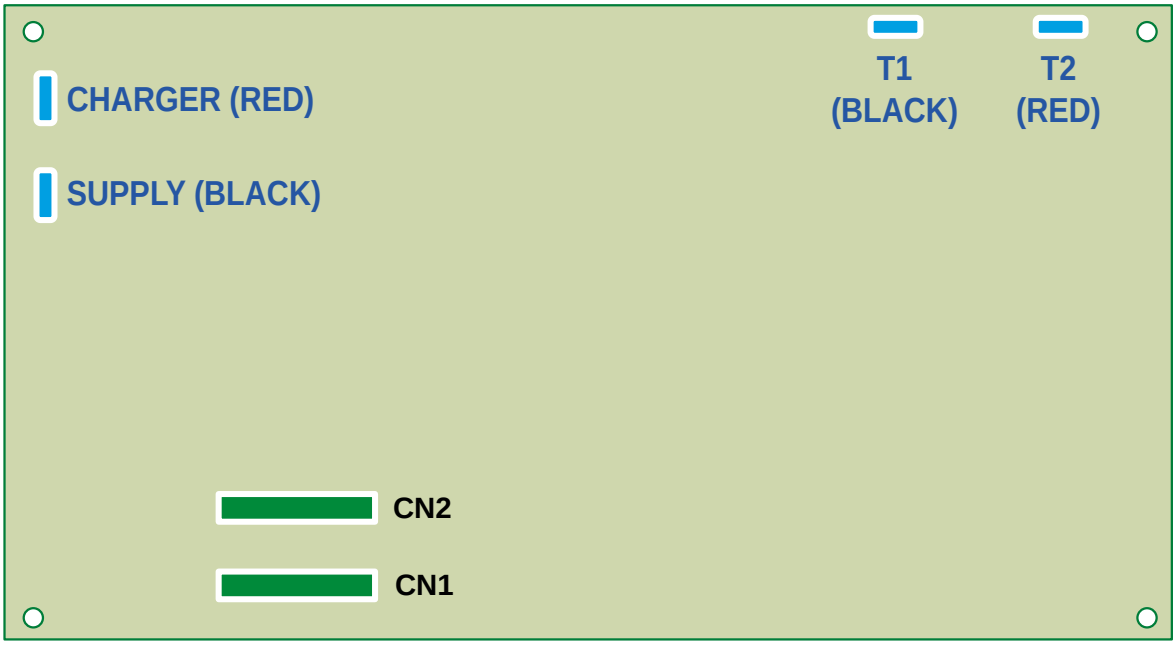
NO	Item	CH1	CH2	CH3	CH4
1	Channel name	+3.3V	+5V	+24.0V	+24.0VF
2	Rated outputting voltage	3.3V ± 4%	+5V ± 4%	+24V + 15%/-10%	+24V + 15%/-10%
3	Rated outputting crrunt	2.5A	0.5A	1A	2A
4	Uses	MICOM,CMOS LOGIC	MICOM,CMOS LOGIC	MOTOR,FAN	MOTOR,FAN

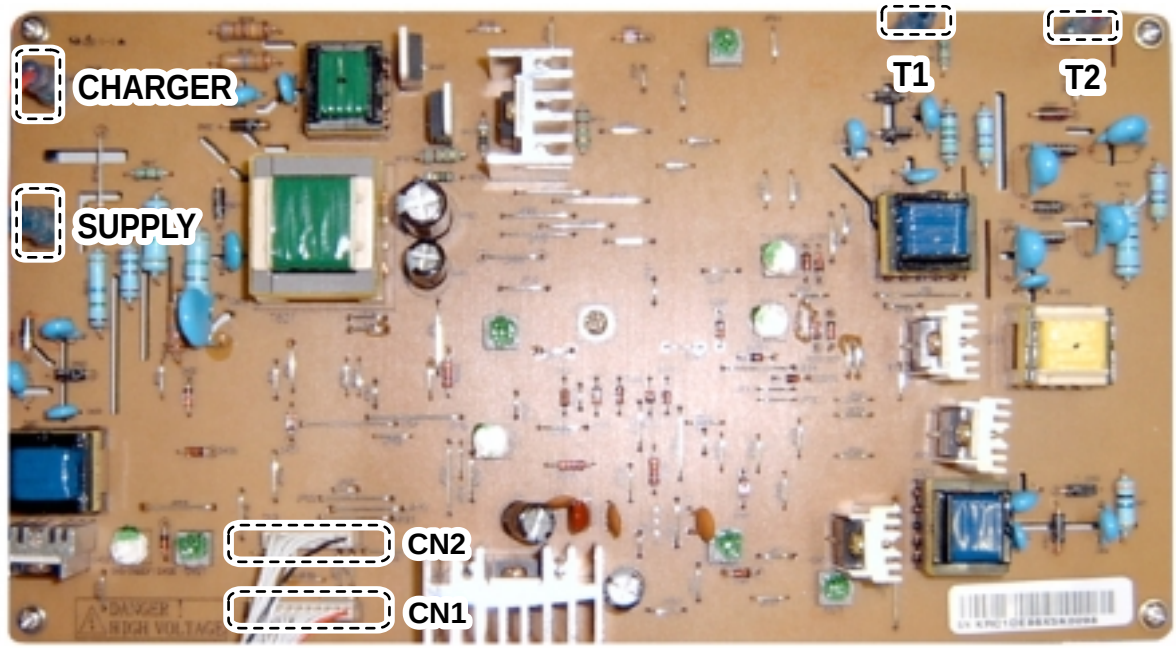




4.1.7 HVPS (High Voltage Power Supply) PBA

The HVPS PBA uses the 24V created by the SMPS to generate the high voltages used by the charger, supply, T1,T2 and DEVE processes. For bests quality images these high voltages must be , controlled accurately to maintain the print quality. The high voltages produced are supplied to toner, OPC cartridge, ITB unit, and transfer roller.





1) Charging Voltage: Charger

* Function : This high voltage is used to charge the surface of the OPC to about -500volt~800volt.
* Output voltage : -200V~-2.0KV DC +/- 3% (Duty is changeable, no loading)
* Error type :If MHV was not present, the surface of the OPC is not charged. As a result, toner on the developer roller is transferred over to the OPC drum: therefore, black paper could be printed out.

2) Transfer high voltage: T1(+)

* Function : This high voltage is used to transfer toner from the OPC drum to the ITB unit.
* Output voltage : +400V~ +3.5KV DC +/- 3% (Duty is changeable, no loading)
* Error type : If T1 was not present, it is not possible to transfer toner from the OPC drum to the ITB. As a result, printer output could be faint.

3) Transfer High Voltage: T2 (+)

* Function : this high voltage is use to transfer toner from the ITB to the paper.
* Output voltage : +400V~ +5KV DC +/- 3% (Duty is changeable, no loading)
* Error type : If T2 was not present, it is not possible to transfer toner from the ITB to the paper. As a result, printing output could be faint

4) Cleaning voltage: T2 (-)

* This high voltage is used to transfer (-)toner, remains on transfer roller, from the Transfer Roller to the ITB unit.
* Output voltage : There is no feedback control, and it outputs a fixed voltage (-900V).
* Error type : Toner contamination occurs on the reverse side of the printed-paper.

5) Supplying voltage: Supply

* Function : Supply the duplicated (AC+DC) voltage from the HVPS to the Deve Drive Board.
* Output voltage

  AC Voltage f : 1 KHz ~ 3KHz (Duty is changeable)

  AC Voltage V_{p-p} : 1KV ~ 3KV

  DC : -100V ~ -1000V

* Error type: 1. If this voltage is GND, print density is extremely low.
  2. If this voltage is floating due to unstable contact point at the HV terminal, density becomes so low as that printing results are not visible to the naked eye.

MEMO

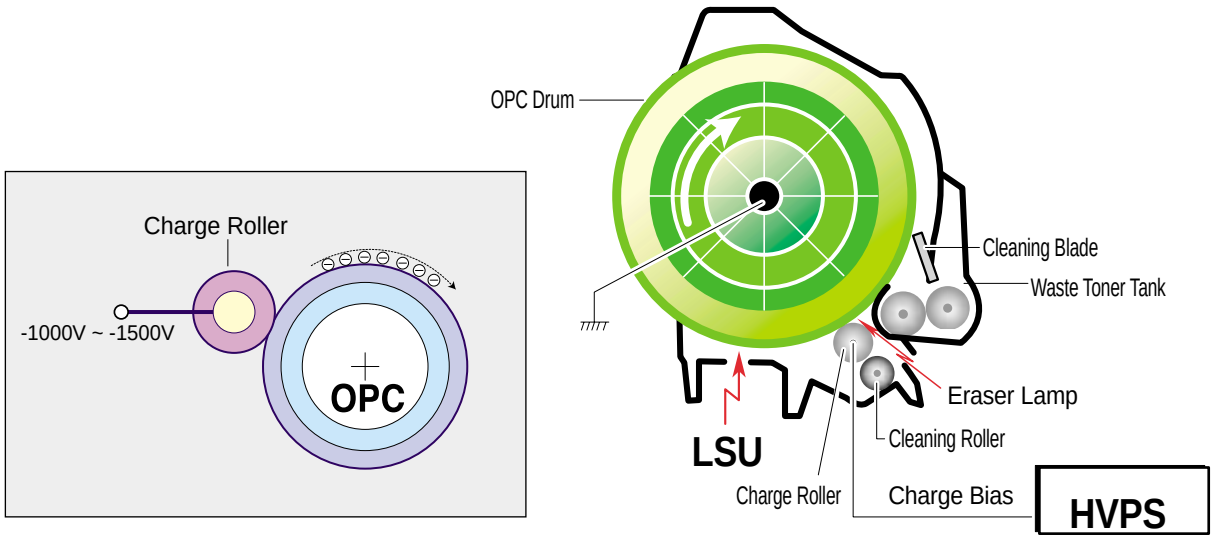
5 System Outline

This chapter describes the functions and operating principals of the main components.

5.1 CLP (Color Laser Printing) Process

5.1.1 OPC Drum Unit (Charge Section)

The OPC Unit is the image formation unit and it consists of the OPC drum, waster toner assembly, charge roller assembly, etc. (see diagram below).



1) Structure

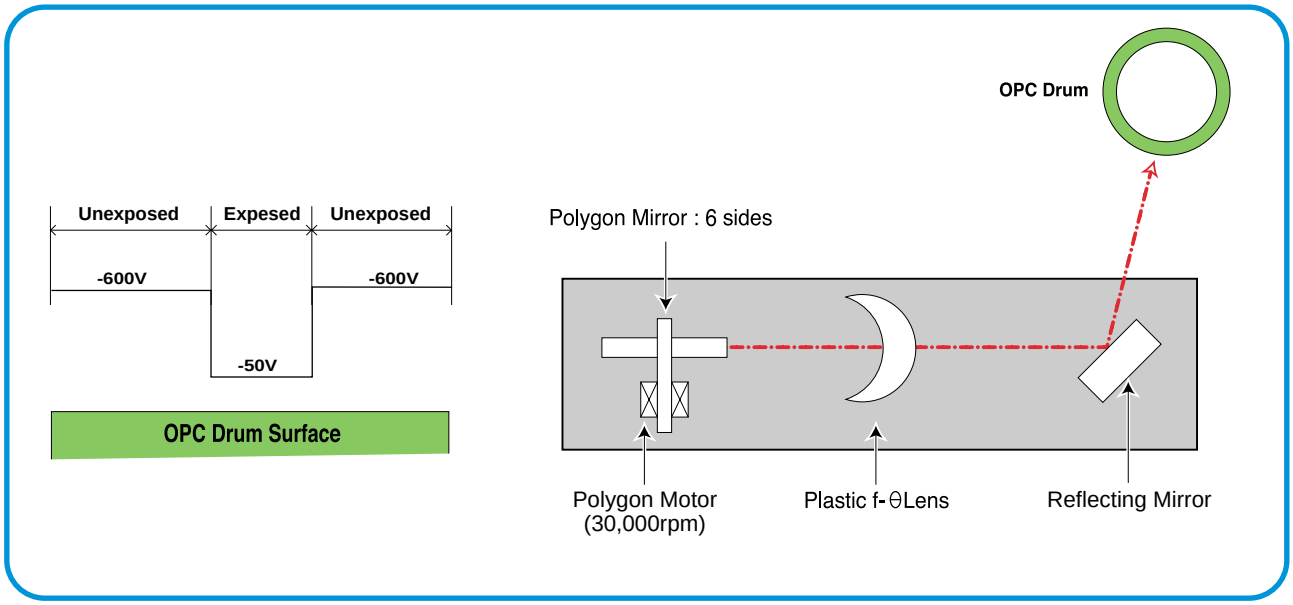
* OPC drum: The laser light coming from the LSU forms an latent electric image on the surface of the OPC drum.
* Cleaning Blade: Removes remaining unwanted toner from the OPC drum.
* Waste toner tank: Collects and stores the waste toner.
* Charge roller: The charge roller is charged to a negative high voltage (-1KV~1.5KV) It is in contact with the OPC drum and produces a uniform (-) voltage on its surface of approximately -500~-800V.

2) Type

* Life span: 50K Images (Color 12.5K)
* Waste toner removal: Transferred to a user replaceable tank
* Waste tank sensors: LED type, detects tank present and tank full
* OPC drum diameter: 120mm
* Power: Main motor (BLDC)
* Charging method: Charge roller
* Eraser method: LED lamp (+5V/2Pin)
* PTL: LED lamp (+5V/2Pin)

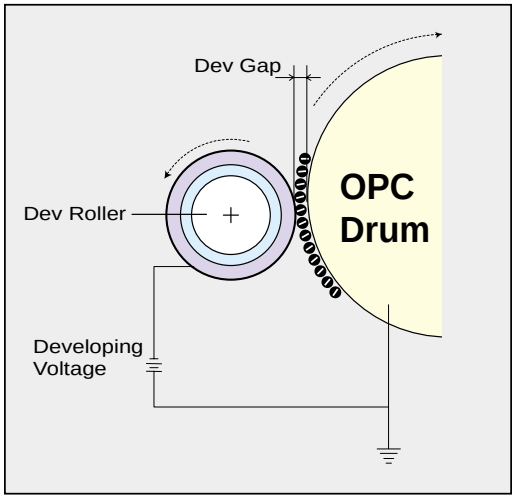
5.1.2 LSU (Exposure)

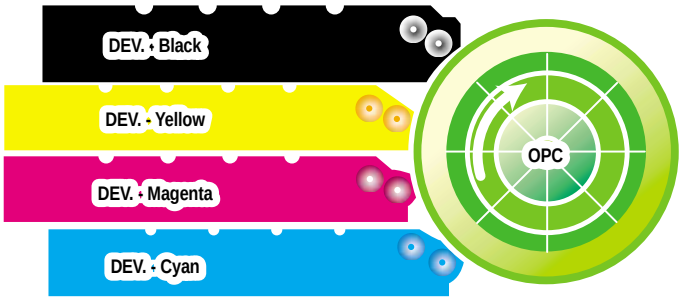
The bitmap image data stream is used to switch the LSU data beam. Where white paper is required the beam is off, where ink is required the beam is turned on. When the laser is on and the beam strikes the OPC drum surface the charge is reduced to -50V, where the beam is switched off the charge on the OPC surface remains at -600V. In consequence a latent image is formed on the drum surface.



5.1.3 Toner Cartridge (Development Section)

In the development stage toner particles are transferred from the toner cartridge onto the surface of the OPC drum. The OPC drum and the developer roller rotate in opposite directions. Toner on the developer roller is charged to the developing voltage (-370V ± 3%). Toner is attracted to the OPC drum in those areas where the OPC drum surface charge is -50V. Toner is not attracted to those areas of the surface carrying a -600V charge.





1) Type

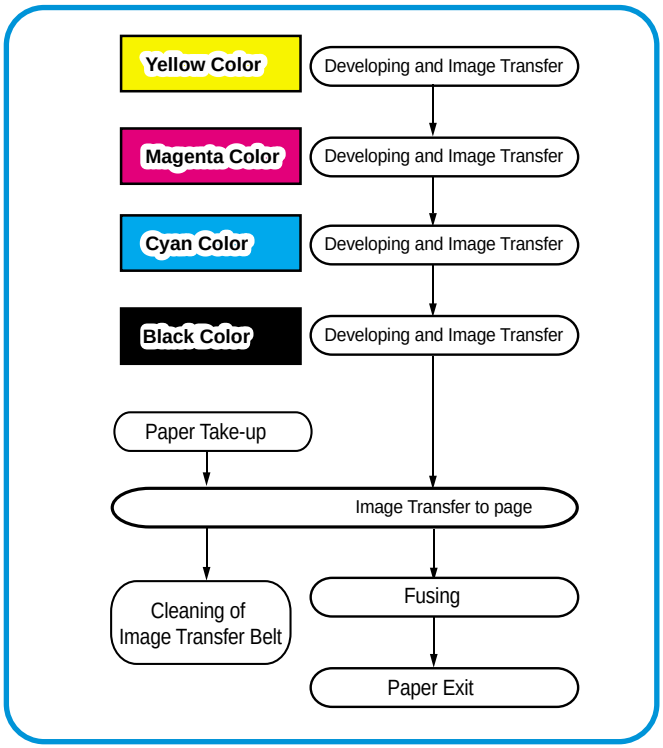
* Developing method: Non-magnetic, Mono-component developing system.
* Toner cartridge order: K, Y, M, C from top.
* Developing sequence: Y, M, C, K
* Life span: 7K(K) / 5K(C, M, Y)
* Power: DEVE motor (BLDC)
* Power transmission: Electric clutch
* Dot counting method

2) Developing state of color

The page image is built up from each of the 4 colors and transferred to the paper as described below.

> Developing sequence: Y, M, C, and K

1) A latent image containing only yellow toner is created on the OPC drum and then transferred onto the ITB.
2) A latent image containing only magenta toner is created on the OPC drum and then transferred onto the ITB to add to the yellow image already in the ITB.
3) A latent image containing only cyan toner is created on the OPC drum and then transferred onto the ITB, adding to the 2 colors already present on the ITB
4) A latent image containing only black toner is created on the OPC drum and then transferred onto the ITB, creating an image on the ITB consisting of the 4 colors.
5) The Image on the ITB is secondly transferred onto paper using the T2 transfer roller.
6) The image on the page is then fused and the paper is ejected into the output tray.



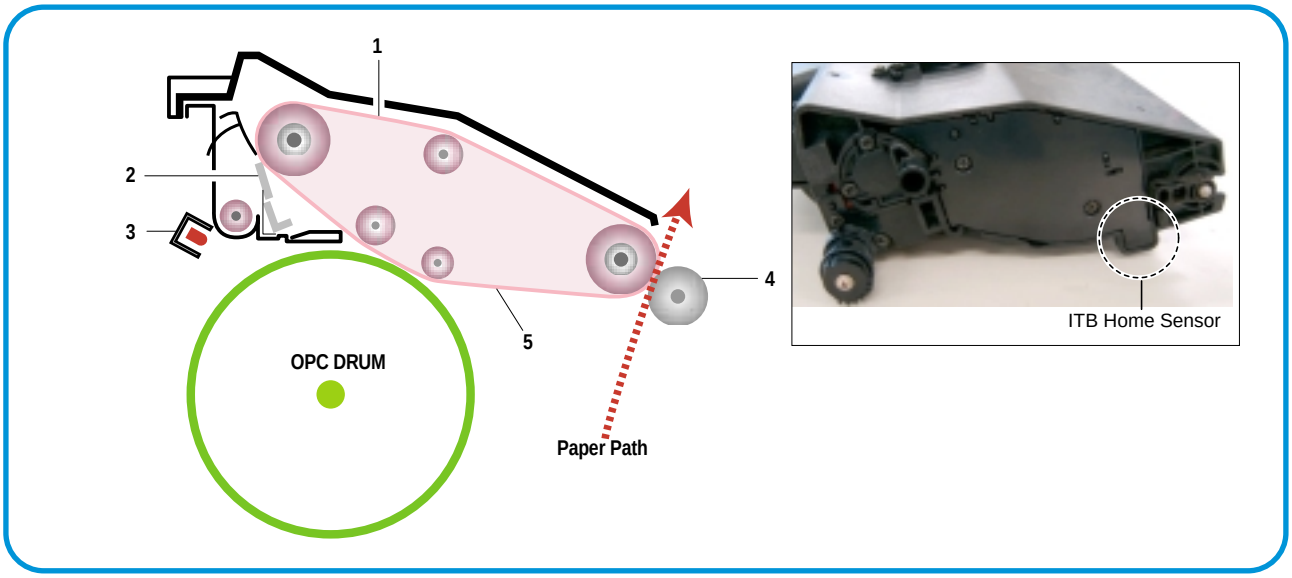
3) Toner cartridge empty detection

Software Dot count.

5.1.4 Image Transfer Section

The toner image formed on the OPC drum is transferred to the ITB (Image Transfer Belt), this is called the primary image transfer. When the final image has been built on the ITB it is transferred onto paper, this is called the secondary image transfer.

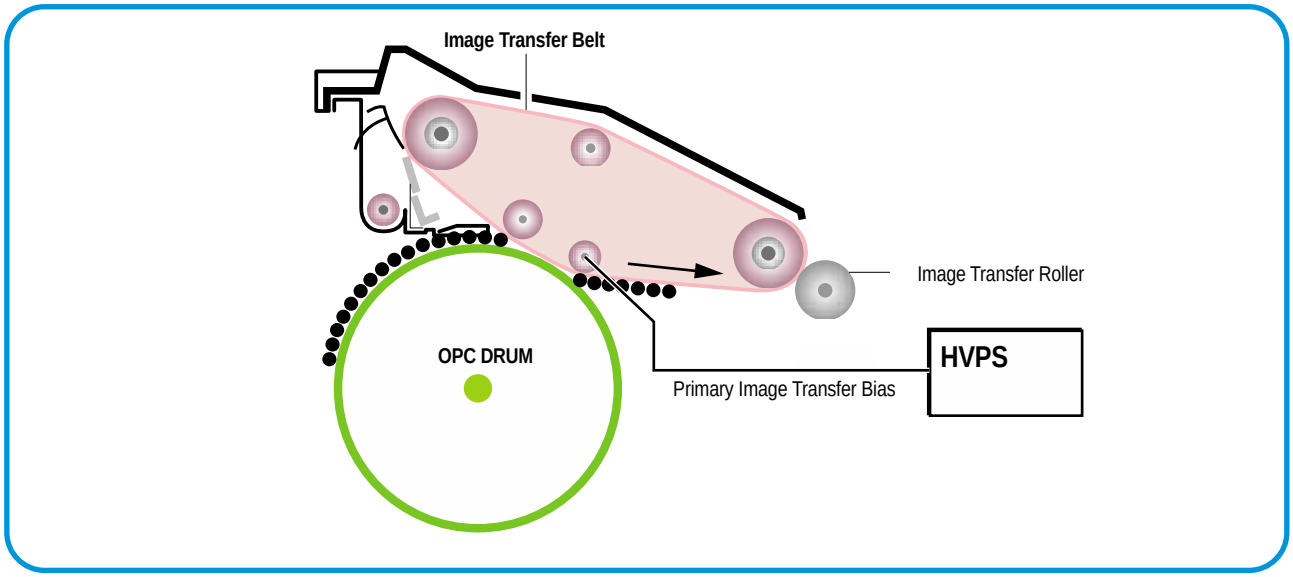
1) Structure



NO.	Name	Description
1.	Image Transfer Belt	Used to build up the 4 color image from the OPC drum. Colors are transferred in the order Y, M, C, K
2.	Image Transfer Belt cleaner	After the final image is transferred onto paper any waste toner is removed from the transfer belt using this cleaning blade
3.	PTL (Pre-Transfer Lamp)	Reduce the electric potential of OPC Drum surface before primary image transfer the image on the OPC Drum.
4.	Image Transfer Roller (T2 Roller)	This transfers the final toner image on the image transfer belt to paper.
5.	ITB Home Sensor	This sensor is used to ensure that each of the 4 color images starts at exactly the same point on the ITB. It works by detecting a fixed point on the belt.

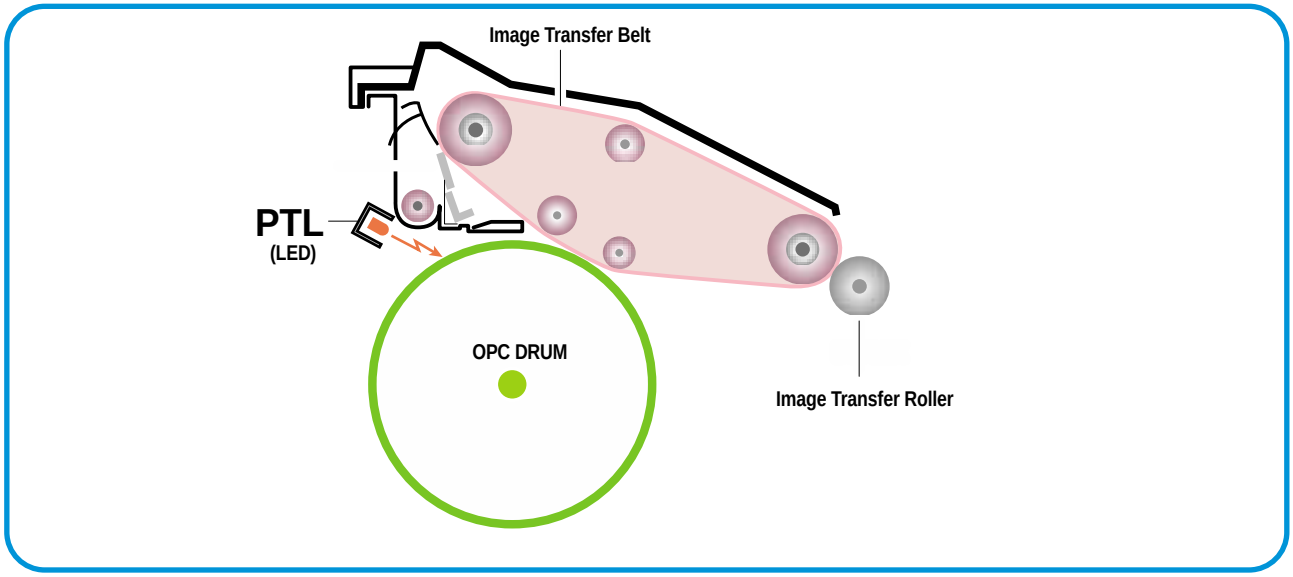
2) Primary Image Transfer

A colored page is split into 4 component color parts and developed one color at a time in turn on the OPC (in the order Y, M, C, K). The final image is built up on the ITB by transferring these separate color images from the OPC drum.



3) PTL (Pre-Transfer Lamp)

It is arrayed LED on PCB Board. Main function is improving the T1 utility factor by reducing the adhesive strength of OPC and Toner by irradiation on the OPC Drum formatted the image.



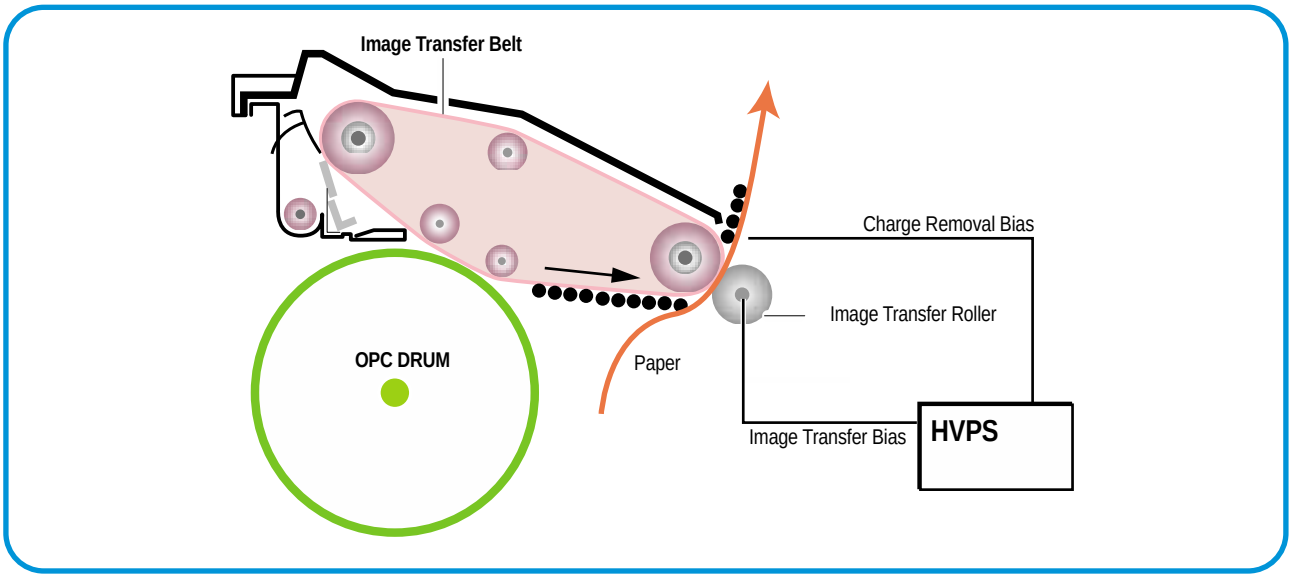
4) Secondary Image Transfer

The image is built up on the ITB (primary image transfer). This image is then transferred onto paper using the T2 transfer roller (roller transfer system) this process is known as the secondary image transfer.

* The HVPS applies the Image Transfer Bias voltage to the Image Transfer Roller (T2), this transfers the image from the belt onto the paper.
* When the image is to be transferred from the ITB to the paper the image transfer roller pressure contact solenoid is activated and this activates a cam which moves the T2 roller into contact with the belt.
*After the transfer has taken place any remaining charge on the paper is removed by applying a charge removal bias (generated in the HVPS) to a charge removal plate

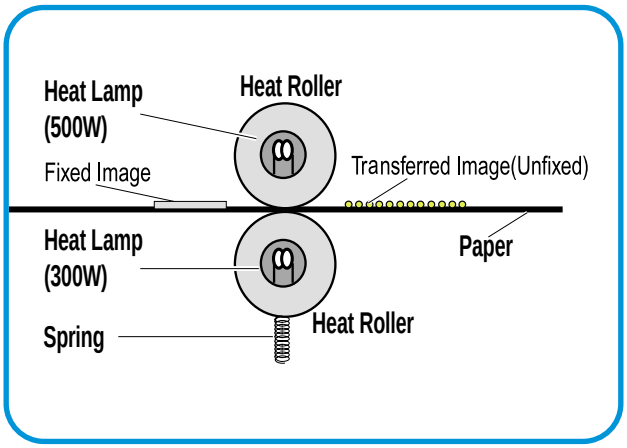
>Type

* Transfer method: Semi-conductive roller contact method
* Effective transferring range: 218mm (i.e. maximum image length)



5.1.5 Fuser (Fusing Section)

Toner that has been through the primary and secondary image transfer processes is fixed, semi-permanently, to the paper.
The fuser unit consists of heat lamps (2 ea), heat rollers (2 ea), thermistor, and thermostats (2 ea). It melts the toner onto the paper using pressure and high temperature to complete the printing process.



1) Thermostat (2pieces)

If the heat lamps or heat rollers overheat the thermostat turns off power to the lamps in the fuser unit to prevent fire. It is a temperature cut-off device.

2) Thermistor

The thermistor detects the temperature of the heat roller's surface, and feedbacks the information to the main processor which uses this information to control power to the fuser lamps in order to maintain the heat roller at a steady temperature.

3) Heat Roller (2pieces)

Halogen lamps are used to heat the heat rollers. The heat rollers have a special Teflon surface which ensures that any melted toner which comes into contact with the heat roller surface does not stick. Paper passes between the two rollers which evenly heat the paper from both sides to melt the toner and semi-permanently fix it to the paper.

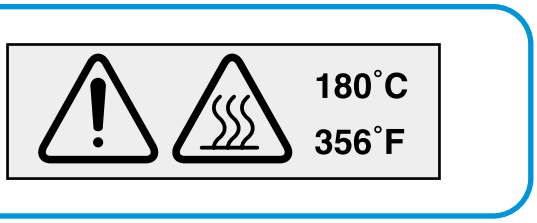
4) Safety Information

> Overheat protection

* 1st level protection: Print engine is stopped if overheat is detected
* 2nd level protection: Software turns off lamp power if overheat is detected.
* 3rd level protection: Thermostat turns off lamp power if overheat is detected.

> Protecting device

* Fuser unit power is turned off when the duplex cover or the toner cartridge door is open.
* This machine keeps the surface temperature of the fuser unit cover under 180°C, and it has a caution label attached inside the exit cover where it can be easily seen by the user.



5.1.6 Exit

After passing through the fuser paper is ejected into the paper exit tray. Any static electrical charge is removed by static discharge brushes.
When operating in duplex print mode, after printing the front side of the page, the paper exit roller reverses to feed the paper back into the machine in order to print the second side of the page.

5.1.7 Waste Toner Collection Process

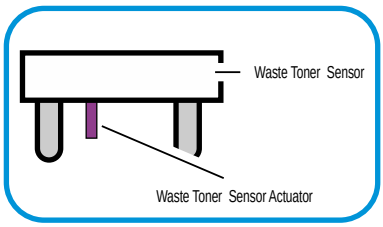
Waste toner on the OPC drum and on the image transfer belt is collected into the waste toner tank.
* After transferring the toner image on the OPC drum to the ITB, a cleaning blade scrapes waste toner from the OPC drum, and the waste toner is collected into a waste toner tank.
* An Image Transfer Belt cleaner scrapes waste toner from the image transfer belt, and the waste toner is collected into a waste toner tank.

1) Waste toner tank sensor

A waste toner sensor detects the presence of the waste toner tank and also detects if the tank is full. This is an On / Off detection. Do not operate the printer without a waste toner tank.

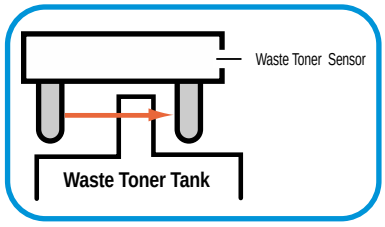
> No waste toner tank

When the waste toner tank is not installed the waste toner senor actuator blocks light from the senor LED.



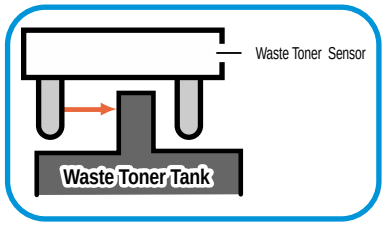
> A little waste toner

When the sensor LED light reaches the photo sensor passing through the waste toner tank this indicates that the tank is not full.



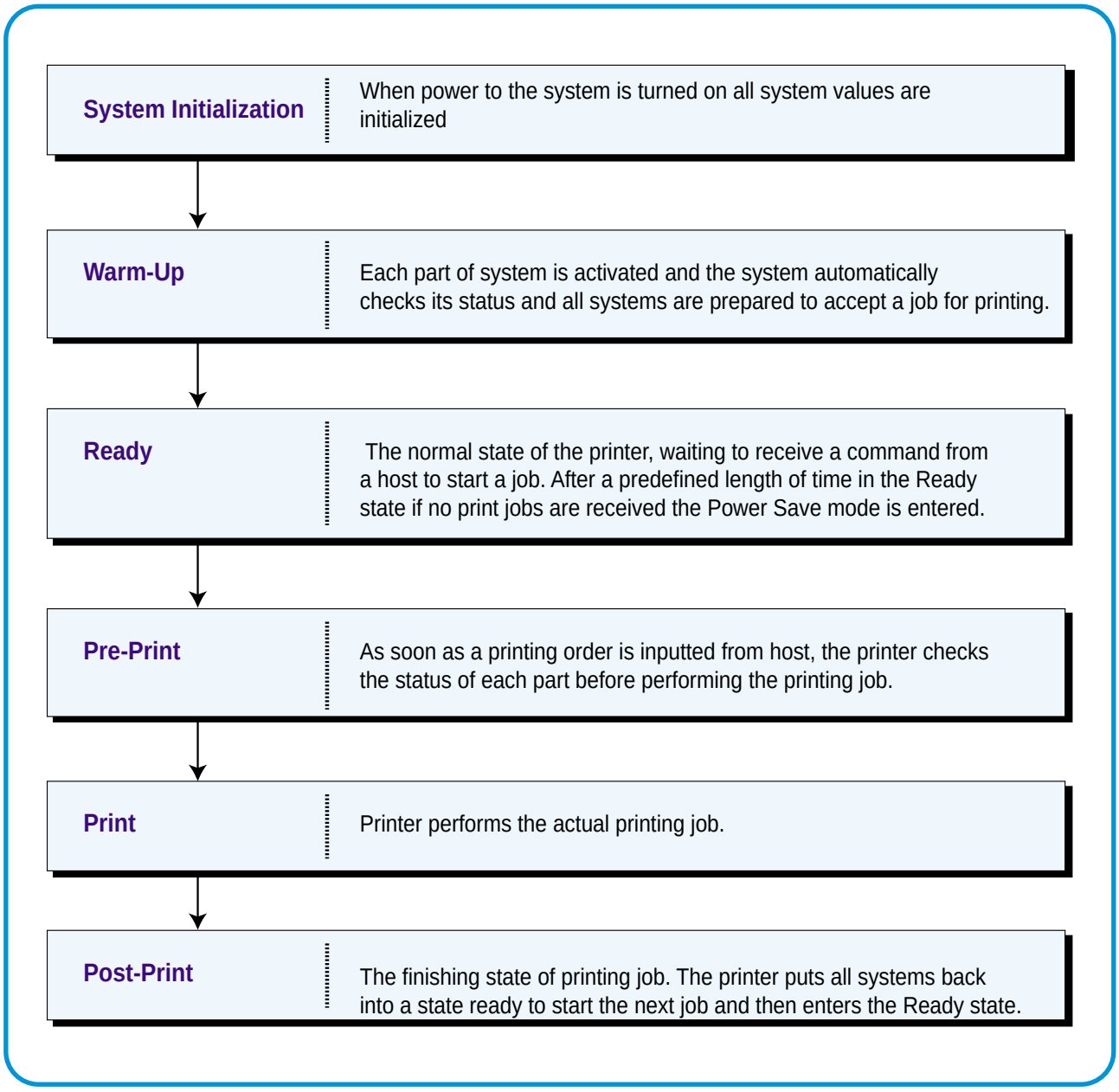
> Waste toner tank full

When the waste toner tank is full to the level of the waste toner sensor, the senor LED light is blocked by waste toner indicating that the tank is full.



5.2 Outline of Engine Firmware

The CLP 510/510N use 4 different colored toners (Yellow, Magenta, Cyan, Black) and it is a laser color printer. Engine firmware controls the print processes, driving the print engine, paper feed, developer, fuser, and paper discharge systems. It has both color and mono printing modes. The printer process sequence is as follows:



5.2.1 System Initialization

The system initialization process is carried out immediately after power on. The following tasks are performed.

1) Initialize ASIC
2) Initialize system variables
3) Initialize a virtual timer
4) Initialize fuser control
5) Initialize ADC
6) Set-up ITB HOME interrupt

5.2.2 Warm-Up

In the warm-up stage, the following tasks are performed.

1) Self Test

* System error check
* Cover open check
* Device (ITB, OPC, DEVE cartridge) check
* Heating error check
* Motion of motor and jam & paper empty check
* Check Feed and exit sensors. If paper is detected it is ejected. If the paper detection does not clear a jam recovery is carried out and the paper drive unit is instructed to drive for the maximum permitted paper length.

2) Heat Control

The heater control unit separately manages the temperature of the heat lamps.

* Target temperature (165°C)
* Temperature below 130°C - heat unit fully on,
* Temperature above 135°C temperature is controlled by reading the temperature value every 10msec.

3) Cleaning

Transfer rollers, OPC and ITB are electrically and mechanically cleaned.

5.2.3 Ready

1) Host interface is monitored for print commands
2) Heat control
* Target temperature (165°C)
* Every 40 seconds, temperature value for the previous 250ms is read and a proportional control process is carried out

3) This is the standby mode entered after warm-up or after completing a print job.
4) System Error check
5) Power save state is entered after timeout

> Wakeup condition
* When a "wakeup" order is received
* When a cover is opened and then closed
* When the level of the paper empty sensor changes.

> Heat lamp is off

5.2.4 Pre-Print

This is the preparation stage before processing a printing job and after receiving a print command from a host.

1) Start LSU
* Run Scanning motor
* Check motor ready
* Turn LD on

2) Start BLDC motor, Eraser/PTL on
* Run main motor
* Check lock signal
* Run developer roll motor
* Check lock signal

3)Turn High Voltage On
* Charger on
* Developer high voltage off

4) Cleaning
* OPC cleaning (Mechanical motion)
* ITB cleaning

5) Jam check
6) Motor Unlock Check
7) Check and Set a High Voltage Condition (T1, T2, Charger)
8) Initialize Printing Parameters
* Paper size, copies, cassette ...
* Image pixels, image times, y-offset, x-offset
* Flags

9) Check Print mode
* Color print mode:
  - Except legal & OHP/Legal/OHP
  - Simplex/Duplex
* Mono pint mode: Simplex/Duplex/OHP

5.2.5 Print

After sensing the ITB home position the following tasks are performed,

Send Psync signal to controller -> Operates virtual timer for each color(Vdata) -> Forms latent image on OPC drum -> Supplies toner on OPC drum -> Transfers image to ITB (T1) -> Pickups a paper -> Transfers image to a paper (T2)

1)Check ITB Home (Treated by Home interrupt): It is designed to detect ITB HOME every 3 seconds.

a) ITB Home sensing
b) If a test mode is set up, a test pattern is printed.
c) A counter value is set up that addresses the timing to turn on page sync.
d) The virtual timer for each color (Y, M, C, and K) is set up
e) If Home is not detected every 3 seconds, an error is reported.

2)Paper path and print

a) Printing paper from cassette, MPT and SCT is picked up
b) Control paper path
 * Stop when the leading edge of a piece of paper reaches the feed sensor.
 * If the leading edge doesn't reach the feed sensor, it is an error.
 * While transferring the last color to the ITB, re-feed the paper.
 * Checks if the paper reaches the exit sensor in certain time. If it reaches too soon, or it doesn't reach, it is an error.
 * Checks that the paper passes the exit sensor or not.
c) Jam check
 * Check reaching time and passing time for the paper reaching and passing the feed and exit sensors. If time exceeds a certain time, it is an error.
d) Duplex control
 * After passing the exit sensor, the duplex clutch is operated to mechanically change the direction of the paper flow in order to print the other side.
e) Printing sequence and motion for each color
 * Use a virtual timer for printing the colors in sequence. (Yellow, Magenta, Cyan, Black)

> What is a Virtual Timer?

A virtual timer is a mathematical function for creating regular action at fixed time intervals. The standard setting is for a 5msc timer interrupt.

5.2.6 Post-Print

This is the last stage of the printing process. Its functions are described below.

a) Clean transfer rollers
b) Stop all virtual timers
c) Initialize parameters used in the printing process.
d) Stop motors

MEMO

6. Disassembly and Reassembly

6.1 Precautions when replacing parts

6.1.1 Precautions when assembling and disassembling

* Use only approved Samsung spare parts. Ensure that part number, product name, any voltage, current or temperature rating are correct. Failure to do so could result in damage to the machine, circuit overload, fire or electric shock.

* Do not make any unauthorized changes or additions to the printer, these could cause the printer to malfunction and create electric shock or fire hazards.

* Take care when dismantling the unit to note where each screw goes. There are 19 different screws. Use of the wrong screw could lead to system failure, short circuit or electric shock.

* Do not disassemble the LSU unit. Once it is disassembled dust is admitted to the mirror chamber and will seriously degrade print quality. There are no serviceable parts inside.

* Regularly check the condition of the power cord, plug and socket. Bad contacts could lead to overheating and firfe. Damaged cables could lead to electric shock or unit malfunction.

6.1.2 Preautions when handling PBA

Static electricity can damage a PBA, always used approved anti-static precautions when handling or storing a PBA.

>> Precautions when moving and storing PBA

1. Please keep PBA in a conductive case, anti-static bag, or wrapped in aluminum foil.
2. Do not store a PBA where it is exposed to direct sunlight.

>> Precautions when replacing PBA

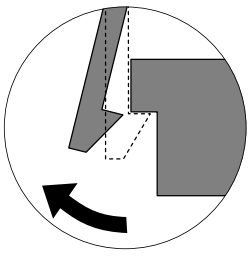
1. Disconnect power connectors first, before disconnecting other cables
2. Do not touch any soldered connections, connector terminals or other electronic parts when handling insulated parts.

>> Precautions when checking PBA

1. Before touching a PBA, please touch other grounded areas of the chassis to discharge any static electrical charge on the body.
2. Take care not to touch the PBA with your bare hands or metal objects as you could create a short circuit or get an electric shock. Take extra care when handling PBAs with moving parts fitted such as sensors, motors or lamps as they may get hot.
3. Take care when fitting, or removing, screws. Look out for hidden screws. Always ensure that the correct screw is used and always ensure that when toothed washers are removed they are refitted in their original positions.

6.1.3 Releasing Plastic Latches

Many of the parts are held in place with plastic latches. The latches break easily; release them carefully.
To remove such parts, press the hook end of the latch away from the part to which it is latched.



6.2 Parts for Maintenance and Repair

6.2.1 Replacement interval for parts with a limited life

Some of the parts in this printer have a limited life, shorter than that of the whole machine. These parts must be replaced periodically.
The table below shows the interval at which these parts should be replaced.
The table shows the life of each part, and is measured when using A4 paper. When servicing a machine always check the status of these parts using the control panel and ensure that parts are replaced at the appropriate times otherwise a general degradation in print quality will occur.

COMPONENT	REPLACEMENT CYCLE	REMARK
Toner Cartridge (Black)	intial (3,000 pages@5% coverage) replacement (7,000 pages@5% coverage)	User replace
Toner Cartridge (Cyan)	intial (2,000 pages@5% coverage) replacement (5,000 pages@5% coverage)	User replace
Toner Cartridge (Magenta)	intial (2,000 pages@5% coverage) replacement(5,000 pagse@5% coverage)	User replace
Toner Cartridge (Yellow)	intial (2,000 pages@5% coverage) replacement (5,000 pages@5% coverage)	User replace
OPC Unit	mono : 50,000 pages color : 12,500 pages	User replace
ITB Unit (T1 Roller)	mono : 50,000 pages color : 12,500 pages	User replace
Waste Toner Tank	3,000 Images	User replace
Fuser Unit	simplex : 100,000 pages (Mono) duplex : 50,000 pages	Engineer
Transfer Roller (T2 Roller)	simplex : 50,000 pages duplex : 25,000 pages	Engineer

* Page: Counted value based on sides of paper printed (Duplex = 2 pages).
* Image: Counted value based on printed monochrome images.
* When printing a color section 1 page = 4 images. (i.e. each side is made up of 4 color images)

The life span of each of these parts is stored in memory. The amount of each 'life' used can be checked at any time using the control panel.
When a part is replaced it is necessary to reset the 'life used' that is stored in memory.

* How to initialize a the value of part's life span:
From the control panel, select the following items in order:
Menu-Setup - Maintenance - Check other - (Select a desired part) - Reset

6.2.2 Printer Cleaning

A printer should be regularly cleaned, especially if it is used in a dusty environment. This will ensure that print quality remains high and failure due to contamination of printing services is less likely to occur.

* Clean the printer with a soft, lint free, cloth dipped in a "Recommended cleaner" "Recommended cleaner" can be purchased from our service center. (where available)

* Do not touch the transfer roller when cleaning the inside of the printer. Grease and oils from the skin will contaminate the surface and reduce print quality.

* Do not touch transfer roller when cleaning inside of machine. If transfer roller gets dirty, printing quality could be low.

* Please refer to the User Manual for cleaning instructions.

6.3 Information Related to Disassembly and Assembly.

6.3.1 Special service parts

Never disassemble or adjust the items mentioned, a stock of these items should be maintained.

1) Disassembly of the LSU unit

There are no serviceable parts inside the LSU. Alignment of the mirrors is critical. Opening the LSU will allow dust into the laser and significantly reduce print quality. It is very dangerous to operate or service a machine with the LSU open or system interlocks disabled. Exposure to laser radiation can cause blindness.

2) Disassembly of the ITB unit

Do not disassemble the ITB. The alignment of the home sensor is critical and is set up in the factory on a special jig. Incorrect re-assembly will cause print quality degradation.

3) Care of the OPC unit

If an OPC unit is exposed to direct sunlight for a long time the parameters and response of the electrostatic surface are changed causing image transfer and print quality issues. Also there is no protective shutter on the OPC drum to prevent scratching Please take extra care to ensure the OPC drum is protected from sunlight and physical contact when servicing the machine.

4) Care of the Toner cartridge

Toner cartridges contain an extremely fine powder. Please keep toner cartridges away from children. The toner powder contained in the toner cartridge may be harmful and if swallowed you should contact a doctor. Take care not to spill toner - spillages should be cleaned with a vacume cleaner and washed in could water (hot water sets the toner). Do not touch the developer roller surface as contamination will reduce print quality. Take care not to damage the roller's surface when installing or removing a toner cartridge.

5) Disassembly of DEVE drive ass'y and the main drive ass'y

The alignment of the drive mechanism is critical and it has been set up in factory using a jig and a driving gear. It is adjusted for the best gearing alignment. If the motor is disassembled alignment would not be maintained and this could cause operational noise and image problems: image alignment and toner distribution may be affected.

6) Disassembly of terminal parts

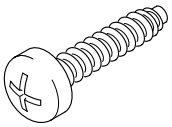
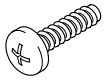
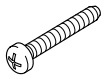
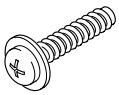
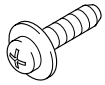
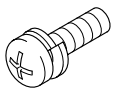
Do not adjust the variable resistors on the PBA. They have been already adjusted in the factory.

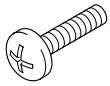
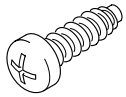
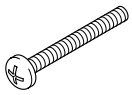
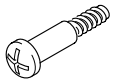
7) Disassembly of the fuser unit

- The fuser melts toner onto the paper at a high temperature: therefore, you need to take special care not to get burned by a hot fuser. When removing the fuser from a set that has recently been operating you need to take extra care.
- Do not touch an AC line (Copper contact) on a main frame even after removing the fuser.

6.3.2 Screws used in the printer

The screws listed in the table below are used in this printer. Please ensure that, when you disassemble the printer, you keep a note of which screw is used for which part and that, when reassembling the printer, the correct screws are used in the appropriate places.

NO	DESCRIPTION	SEC CODE	SPEC
S1	SCREW-MACHINE	6001-000485	2.6*4, GOLD
			
S2	SCREW-TAPPING	6002-000115	4*15, GOLD
			
S3	SCREW-TAPPING	6002-000175	3*8, GOLD
			
S4	SCREW-TAPTITE	6002-000308	2.6*6, GOLD
			
S5	SCREW-TAPTITE	6003-000119	3*8, BLACK
			
S6	SCREW-TAPTITE	6003-000152	2*10, GOLD
			
S7	SCREW-TAPTITE	6003-000179	3*6, GOLD
			
S8	SCREW-TAPTITE	6003-000196	3*10 SILVER
			
S9	SCREW-TAPTITE	6003-000266	3*6, GOLD
			
S10	SCREW-ASS'Y MACH	6006-001193	3*6, GOLD
			

NO	DESCRIPTION	SEC CODE	SPEC
S11	SCREW-TAPTITE	6003-000269	3*6, GOLD
			
S12	SCREW-TAPTITE	6003-001001	3*8, BLACK
			
S13	SCREW-MACHINE	6001-000568	3*8, SILVER
			
S14	SCREW-TAPTITE	6003-001256	4*10 SILVER
			
S15	SCREW-TAPTITE	6003-000261	3*6, GOLD
			
S16	SCREW-MACHINE	6003-001068	2*16, BLACK
			
S17	SCREW-TAPTITE	6003-000301	4*6, GOLD
			
S18	SCREW-SPICIAL	6009-001396	3*10, BLACK
			
S19	SCREW-TAPTITE	6003-000008	4*6, SILVER
			

6.3.3 Opening Covers and replacing Consumable parts

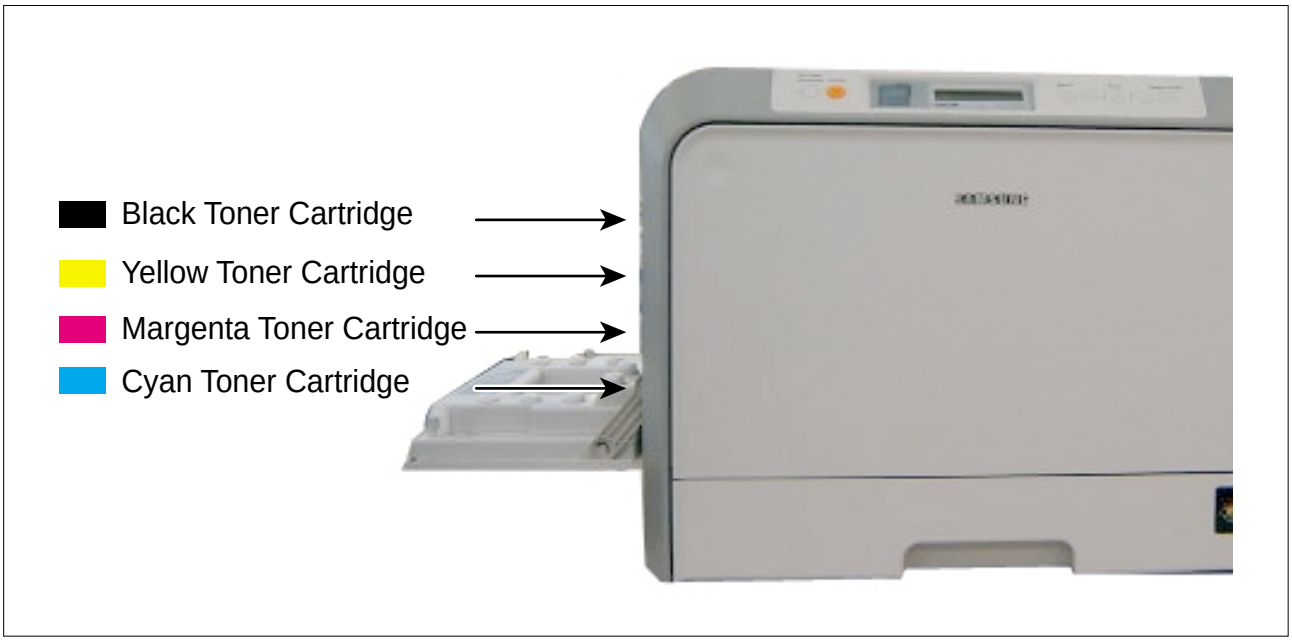
This section shows you how to open the covers (front cover, DEVE cover, exit cover, and duplex cover) and how to remove and replace the consumable parts (toner cartridge, ITB unit, and OPC drum).

>> Consumable parts removal

1) Pull the side handle to open the DEVE cover and then press down firmly until the toner cartridges are ejected.

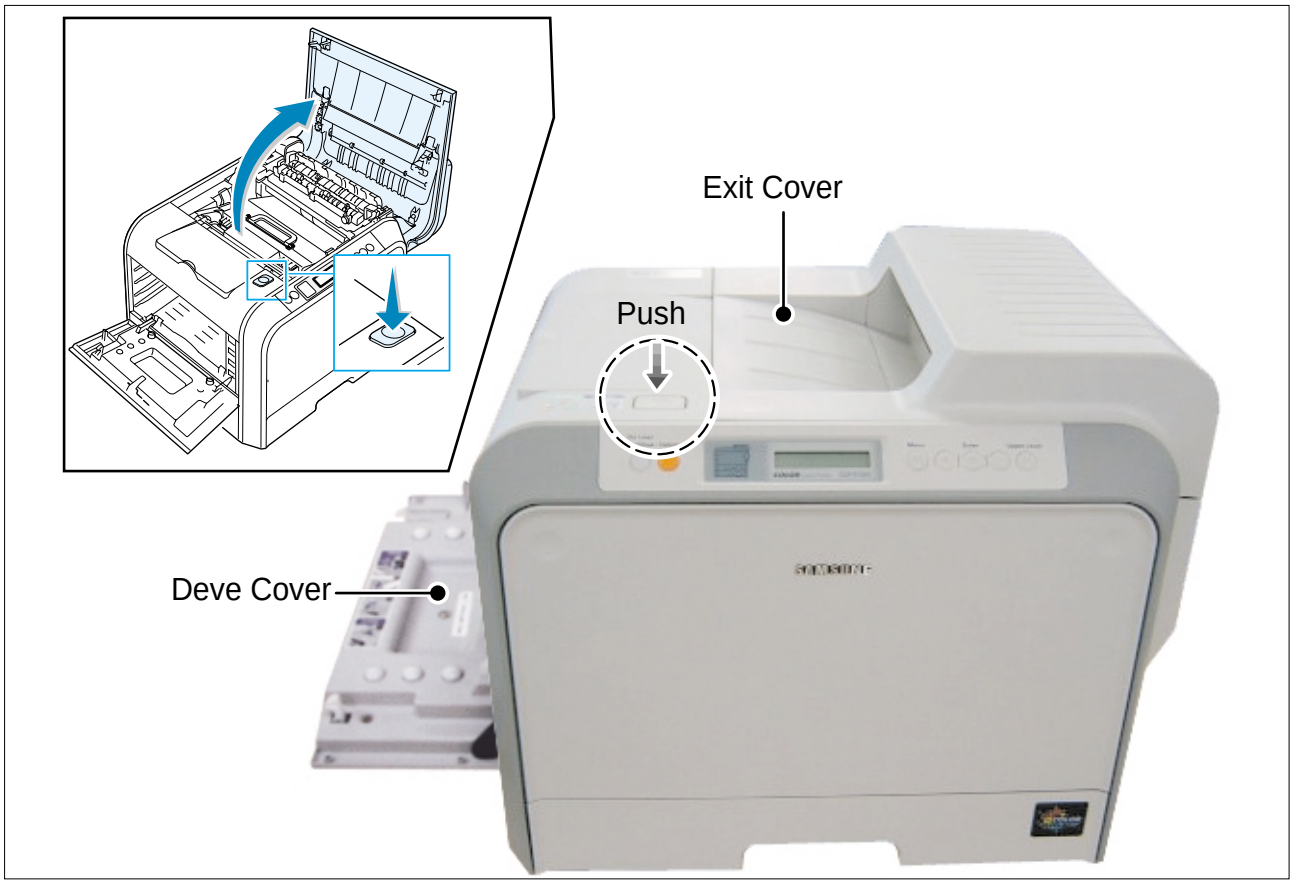
Caution: *Before opening the exit cover, completely open the DEVE cover (eject the toner cartridges)*

2) Removing a toner cartridge (K, Y, M, and C)



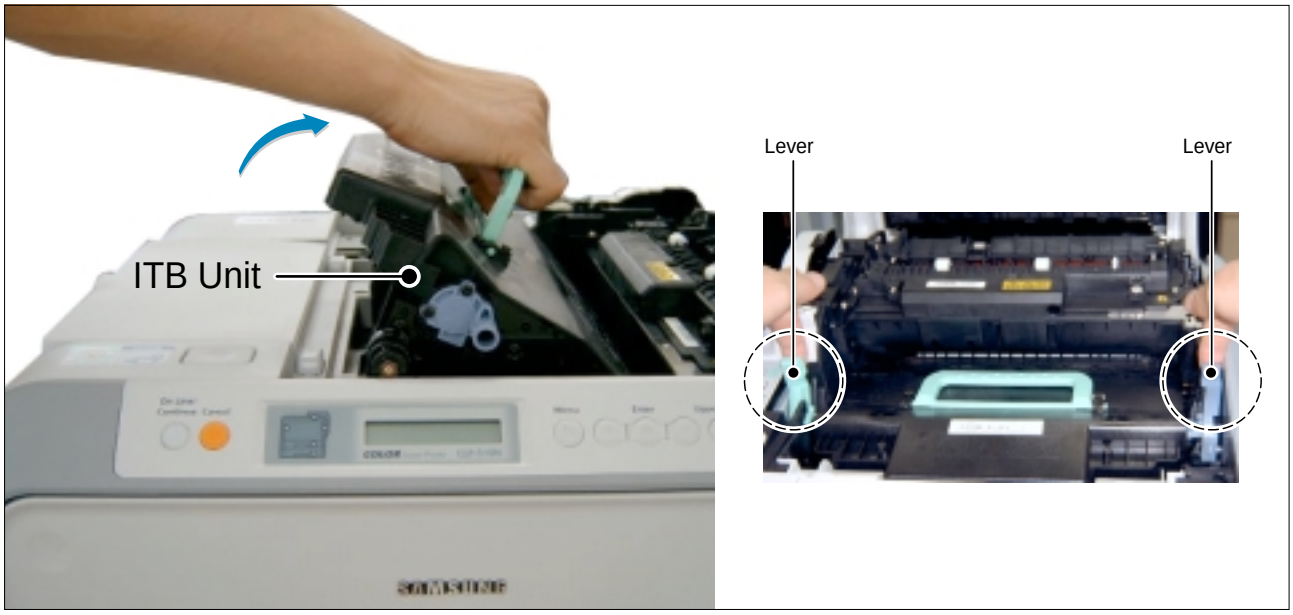
Caution: * *Take care not to damage the rollers.*
* *Keep the toner cartridge on a flat surface.*

3) Open the exit cover by pressing the cover open button.

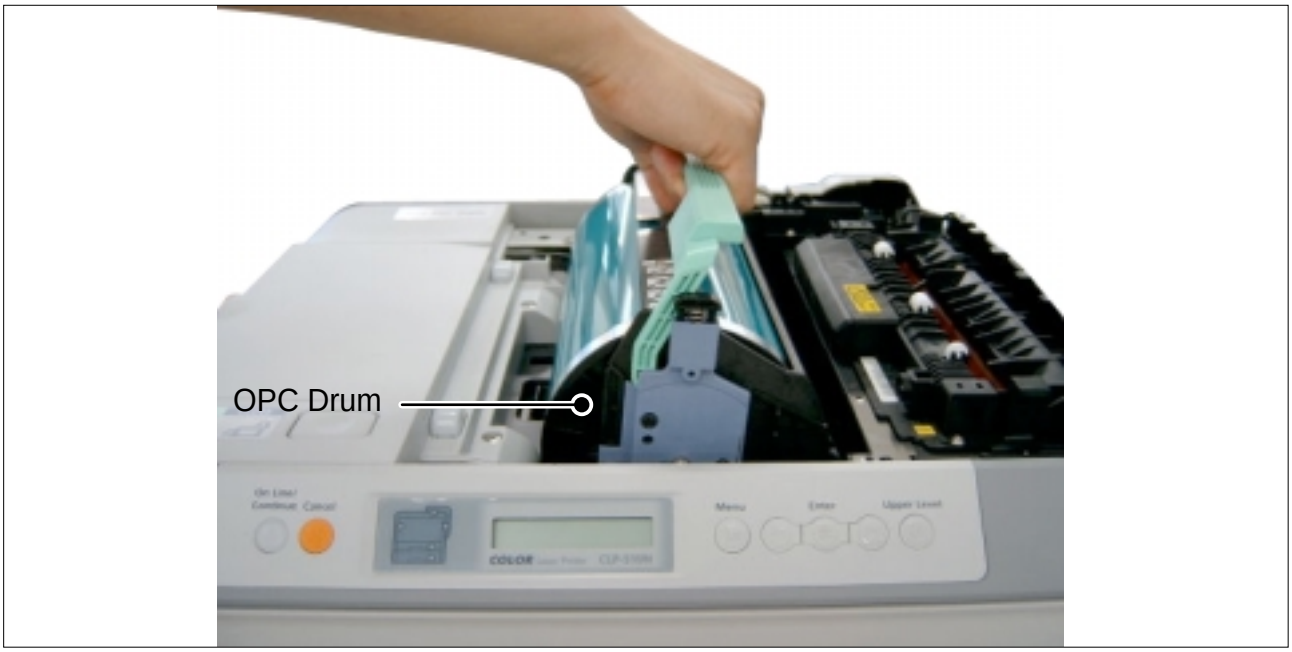


Caution: *Before opening the exit over completely open the DEVE cover until it is at right angles to the main frame and the toner cartridges are ejected*

4) Remove the ITB unit by releasing the ITB lock levers on both sides of the unit.



5) Remove the OPC drum by carefully lifting the unit using the handle provided. Take care to ensure that the OPC drum surface is not scratched or damaged. Do not touch the surface of the drum when lifting the drum handle or when removing the drum.

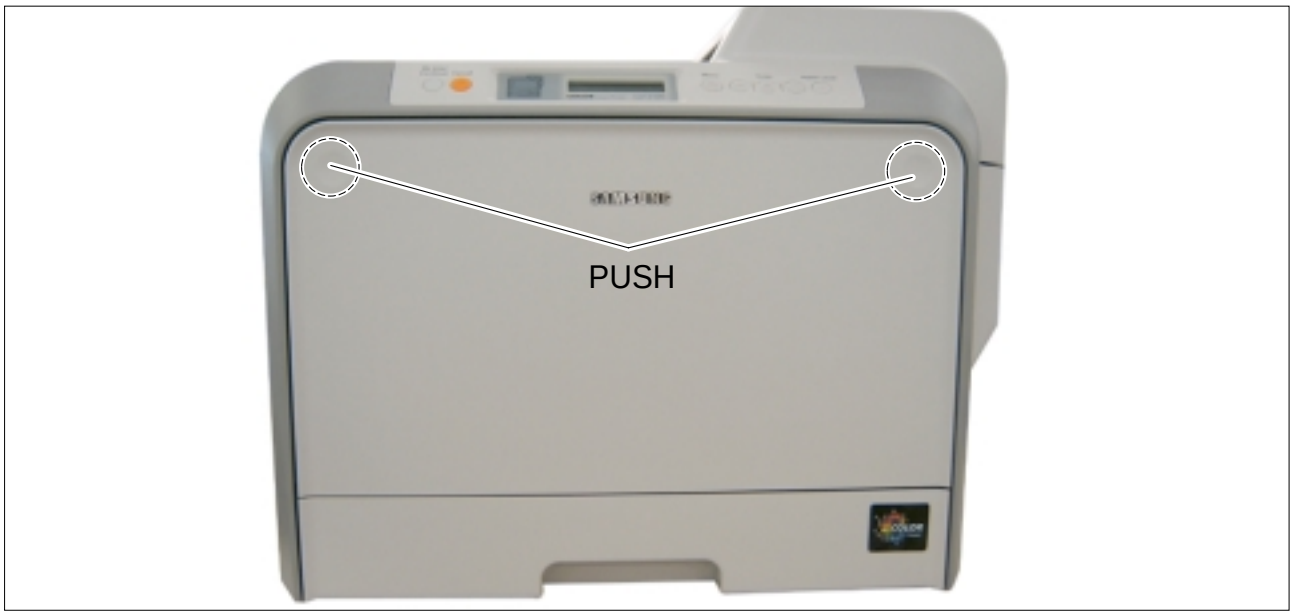


Caution: The surface of the OPC drum could be damaged if the OPC drum is exposed to direct sunlight for more than 5 minutes.

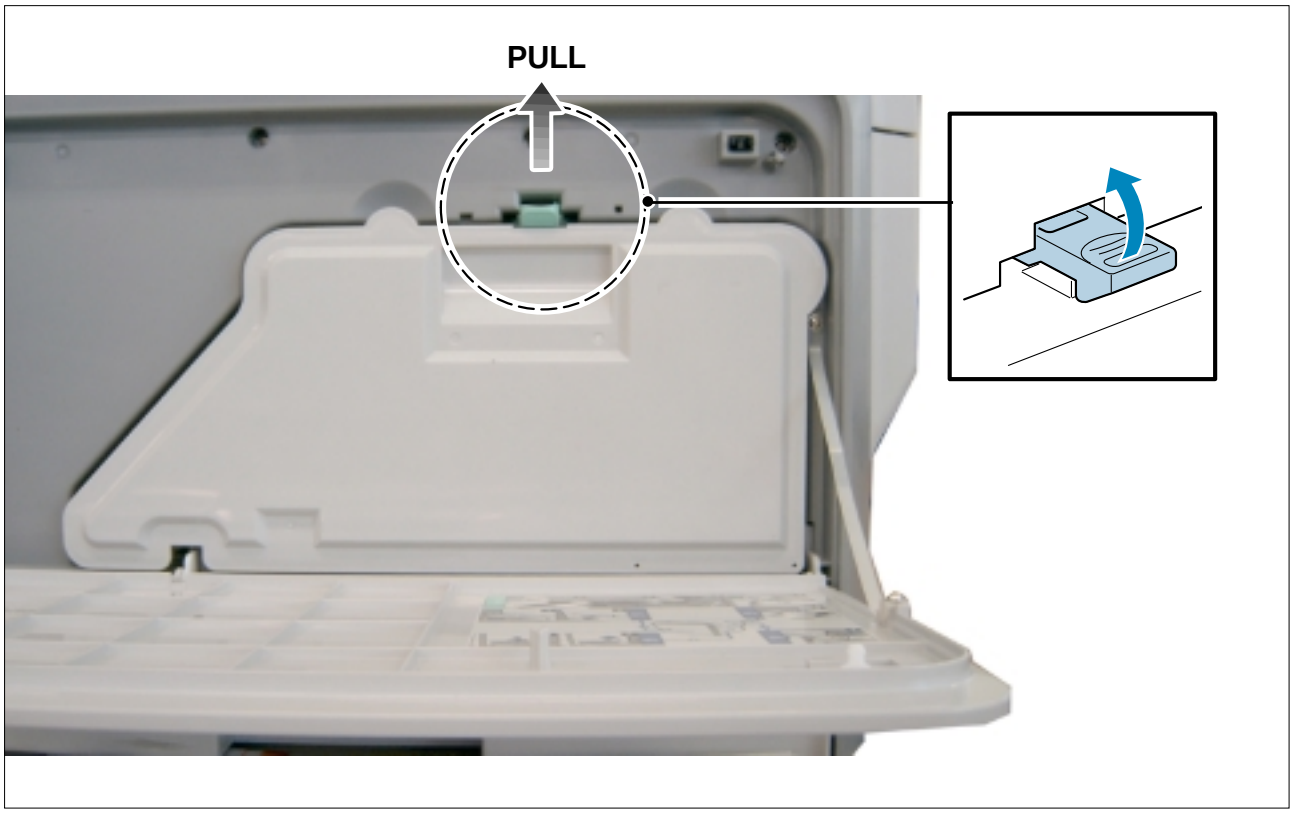
6.3.4 Replacing the Waste Toner Tank

>> Removing the waste toner tank

1) Push the top corners of the front cover to release the cover catches.

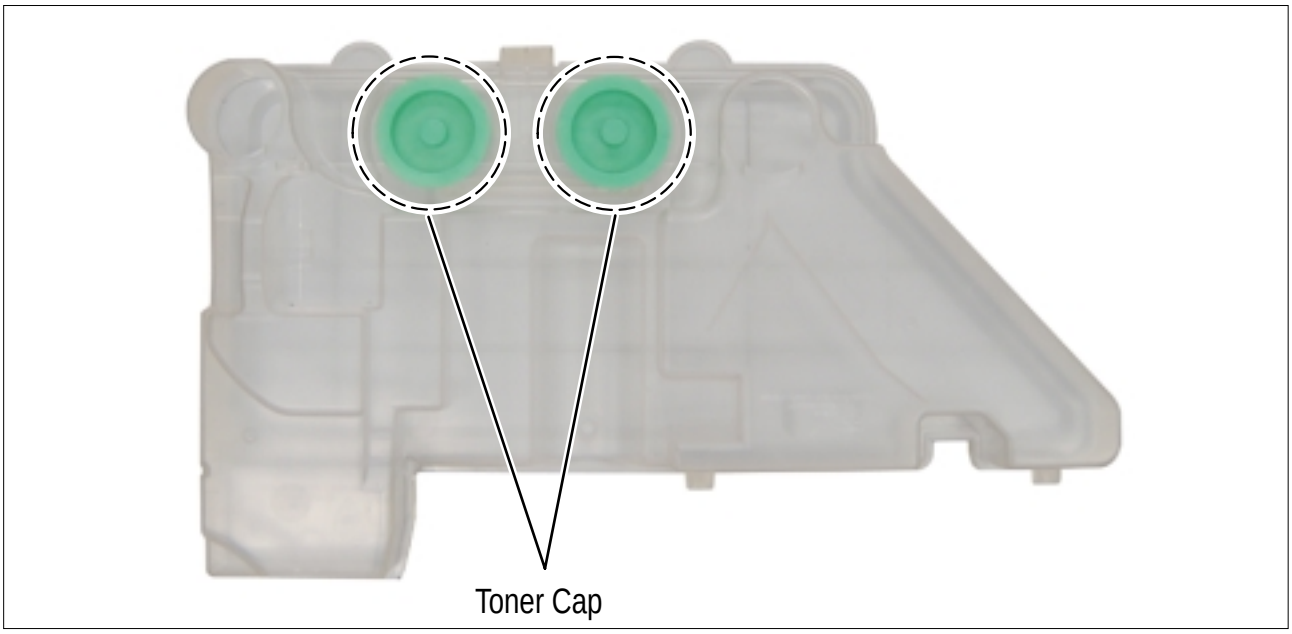


2) Lift the hook at the top of the waste toner tank and gently pull the top edge of the waste tank forward. Lift the tank out.



Caution: *Be careful not to let toner spill from the waste toner tank.*

3) Remove the Toner Caps from the side of the tank and fit them to the tank inlets as shown below



4) Fit a new waste toner tank.

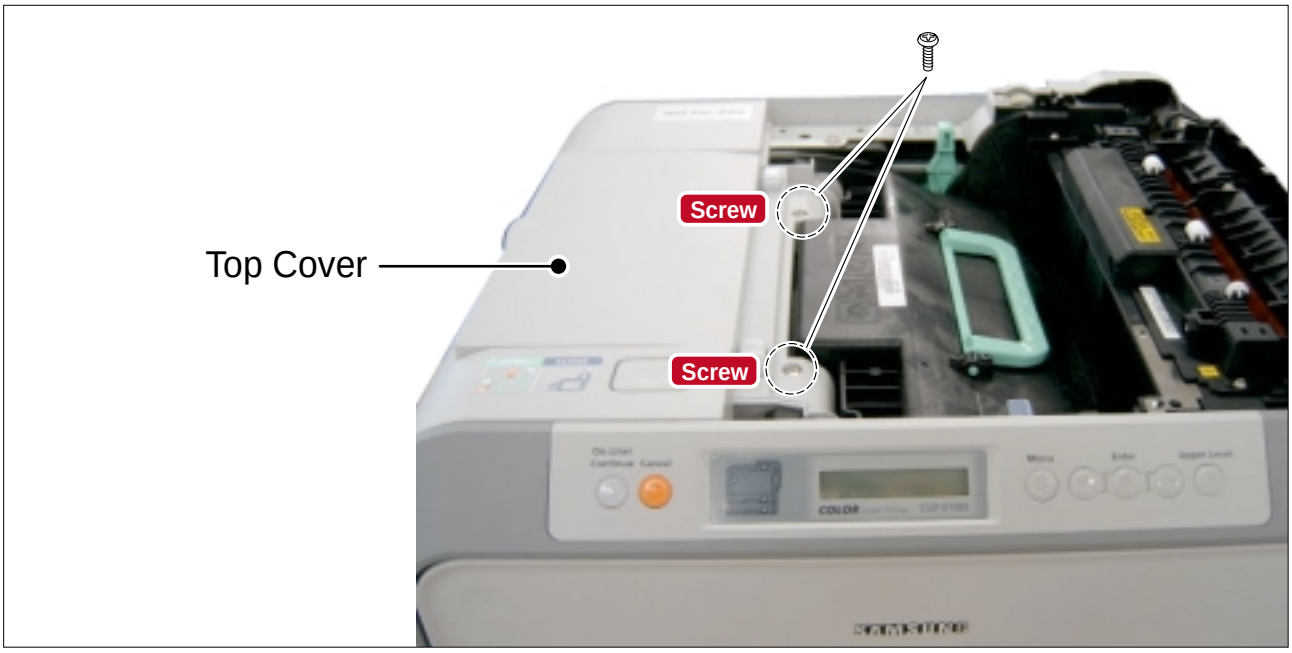
6.4 Disassembly Procedure

6.4.1 Top cover and Front cover

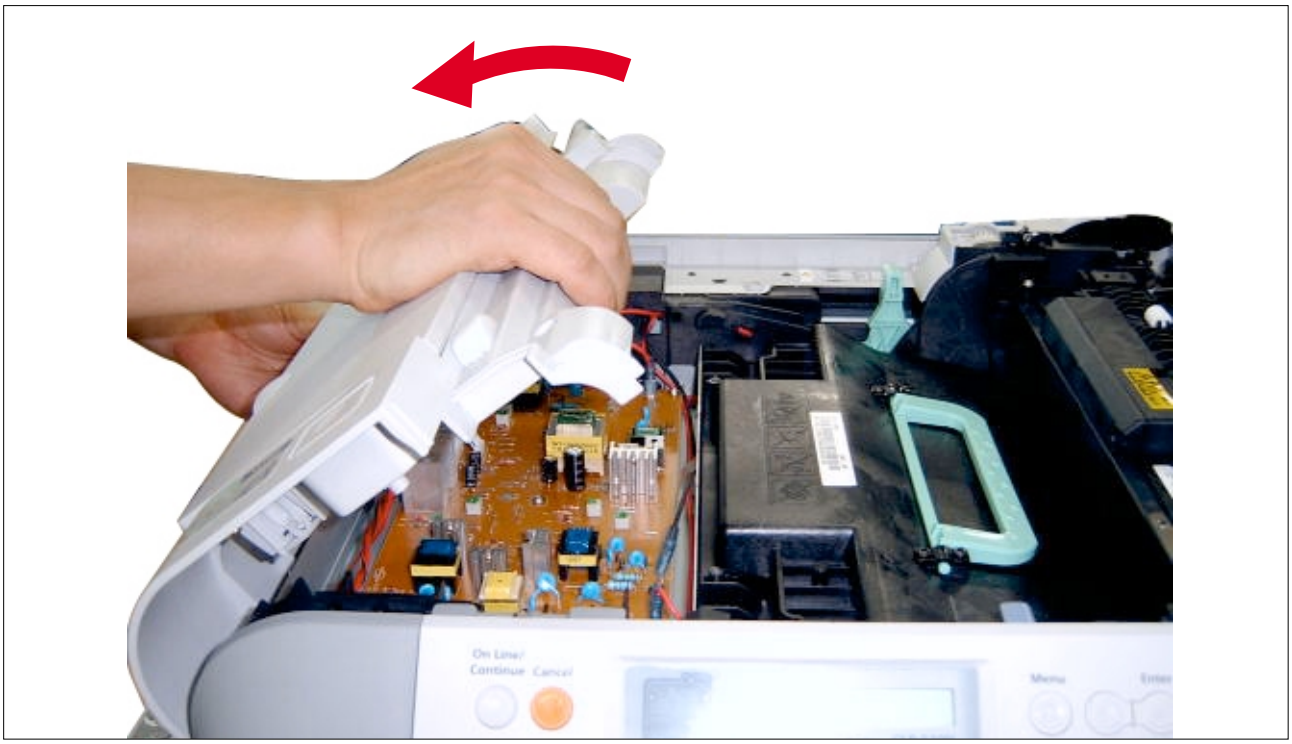
1) Remove the cassette.

2) Open all of the covers in the following order:- Duplex cover - DEVE cover - Exit cover (Refer to 6.3.3)

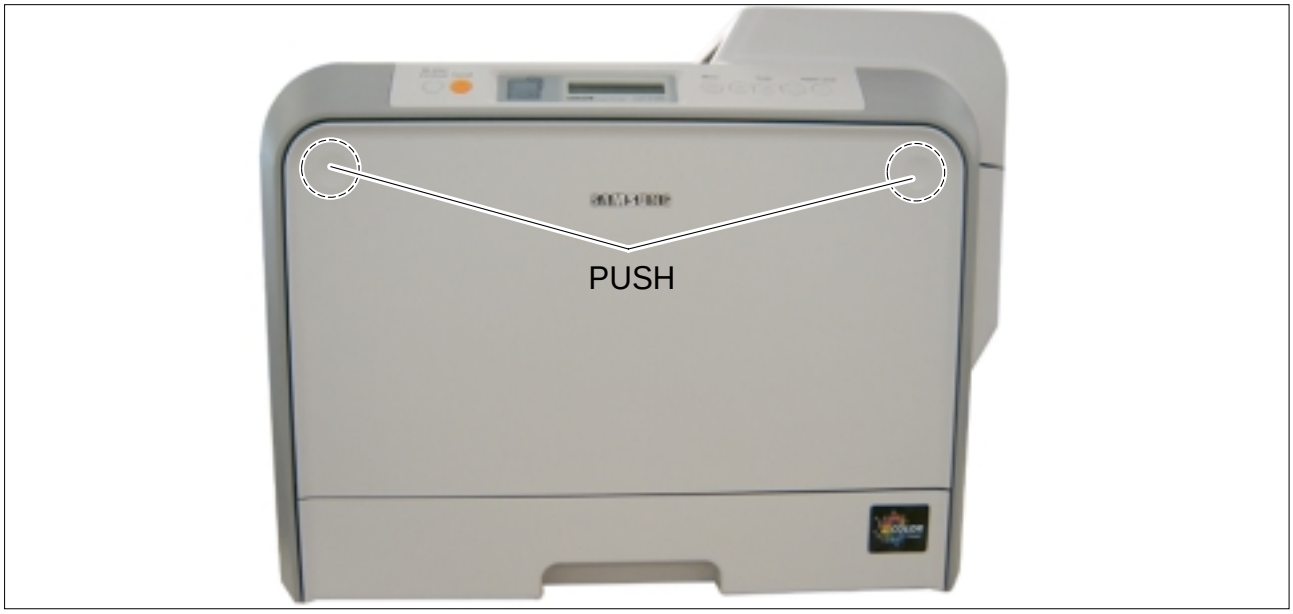
3) Release 2 screws (4*10 silver).



4) Take out the Top Cover as shown below.



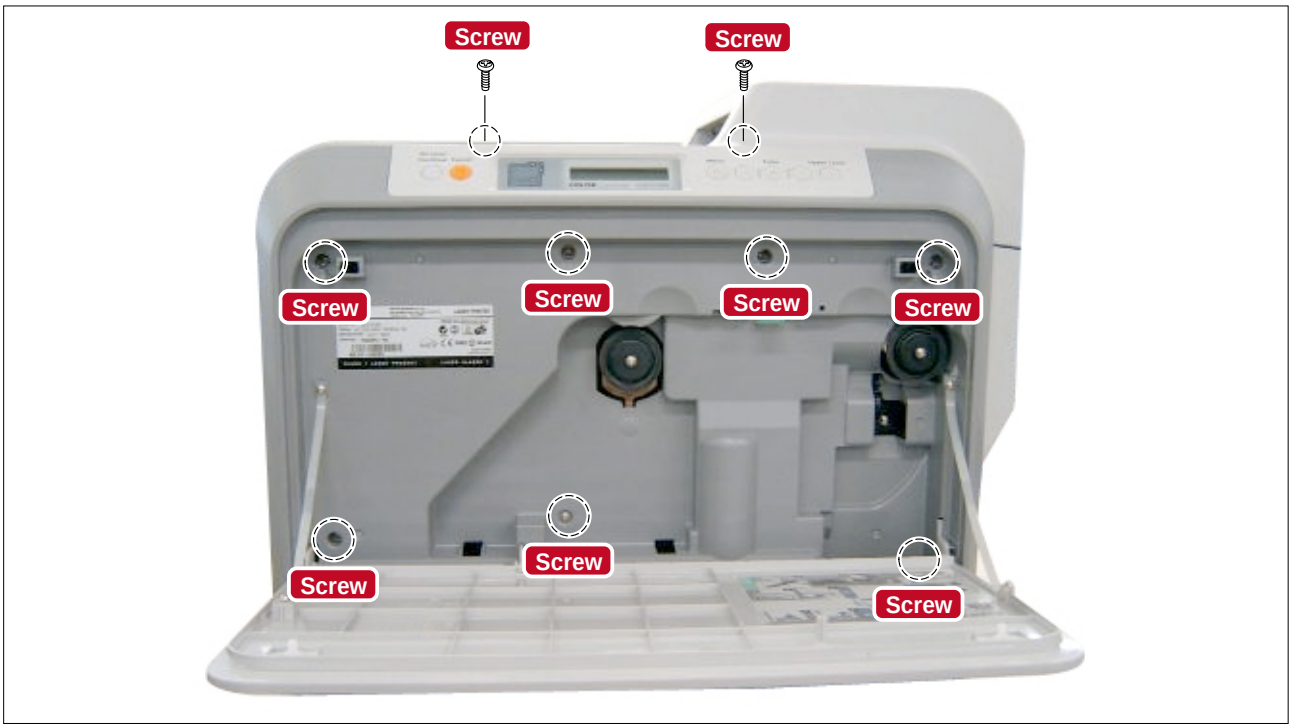
5) Push both of the top corners to release the catches and open the front cover and then remove the waste toner tank. (Refer to 6.3.4)



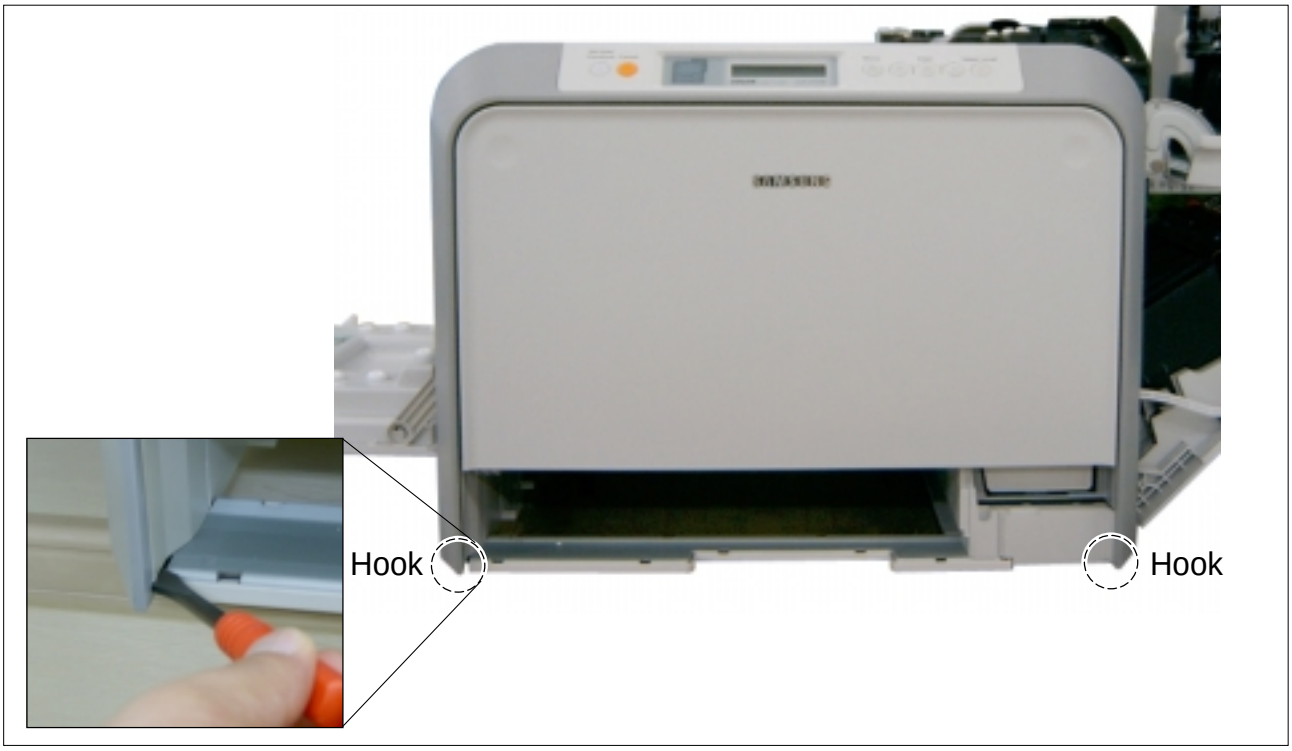
6) Lift the hook at the top of the waste toner tank and gently pull the top edge of the waste tank forward. Lift the tank out.

Caution: Remember to fit the Toner Caps.

7) Release 7 screws (3*10 silver) located inside the front cover.
Release 2 screws (3*10 silver) located on the top of the front cover.



8) Release 2 hooks on the right and the left side with a flat bladed screwdriver and then remove the front cover. Take care to disconnect one harness connected to the frame.



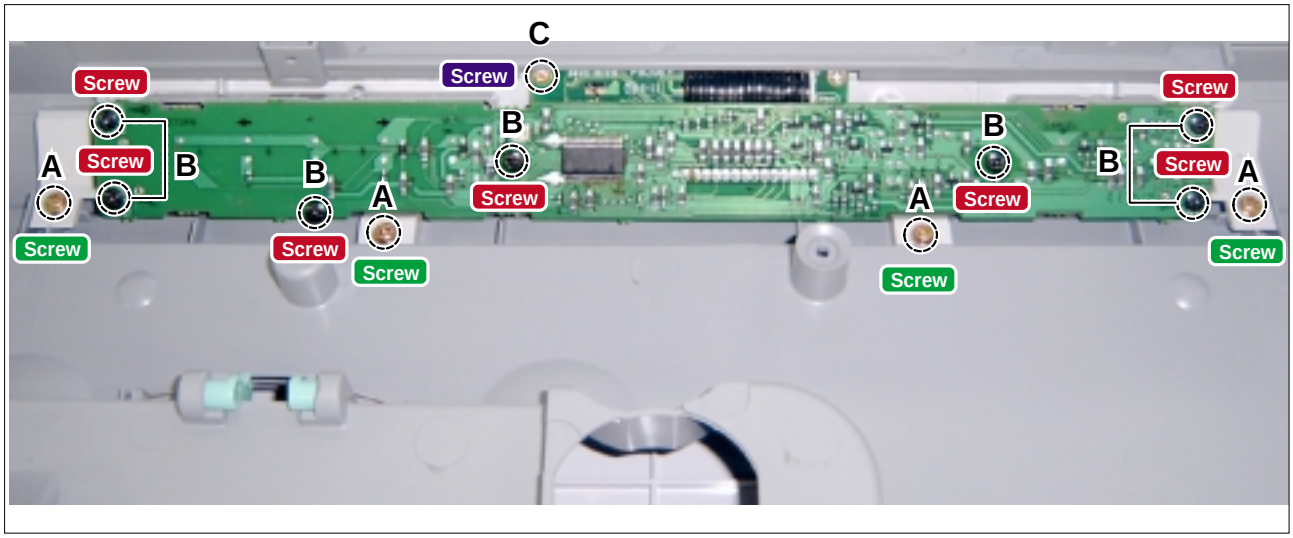
6.4.2 OP Panel Ass'y

>> Before disassembling it: Remove the front cover. (Refer to 6.4.1)

1) Release 4 screws ('A' below 3X8 gold) and take out the OP panel ass'y (Panel PBA).

2) Release 7 screws ('B' below 3X8 black) from the Panel PBA and remove the panel PBA.

3) Release 1 screws ('C' below M2.6X6 gold) from the LCD and then take out the LCD.



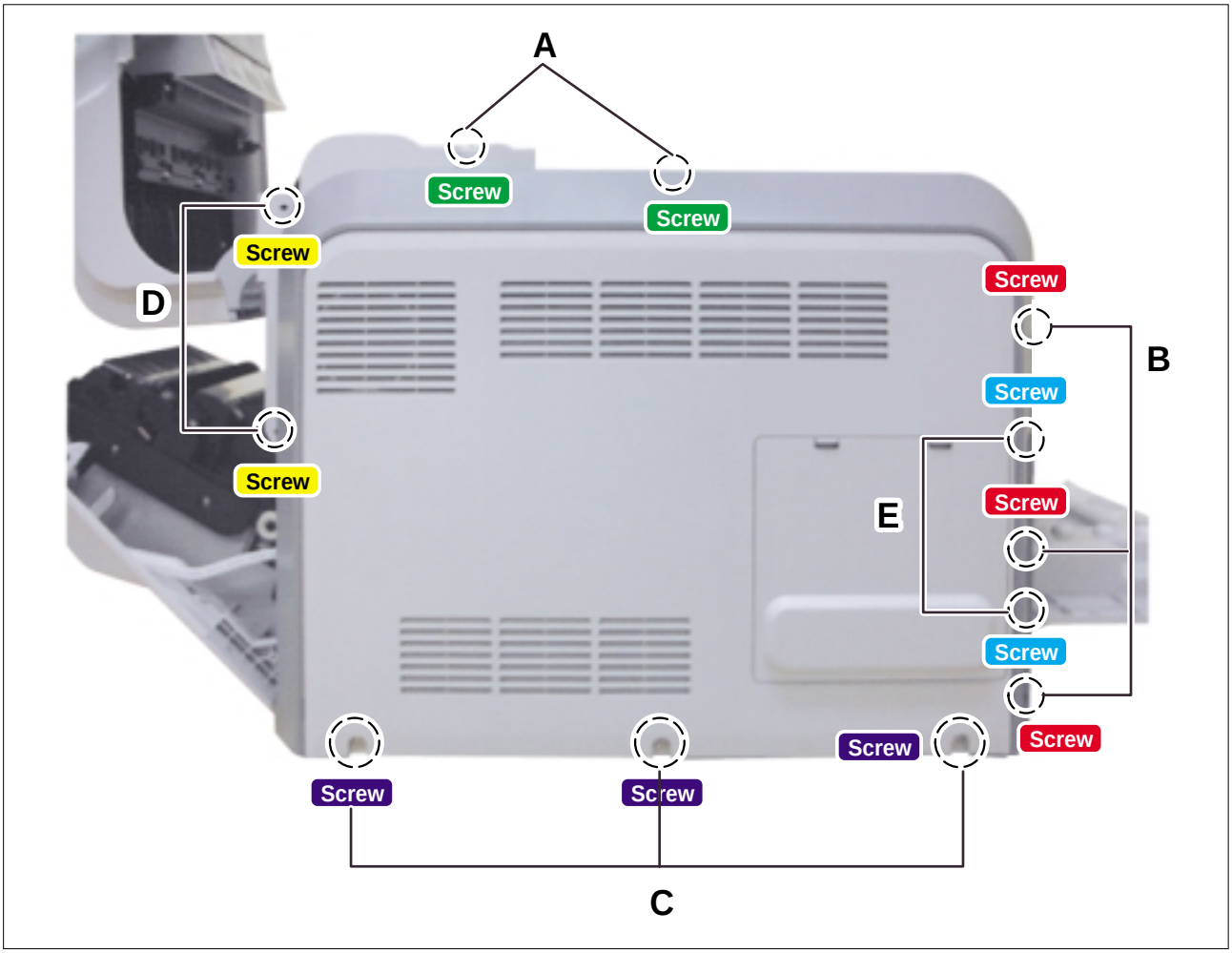
- **A : OP Panel Screw, 3 X 8 Gold (4EA)**
- **B : Panel PBA Screw, 3 X 8 Black (7EA)**
- **C : LCD Screw, M2.6 X 6 Gold (1EA)**

6.4.3 Rear Cover

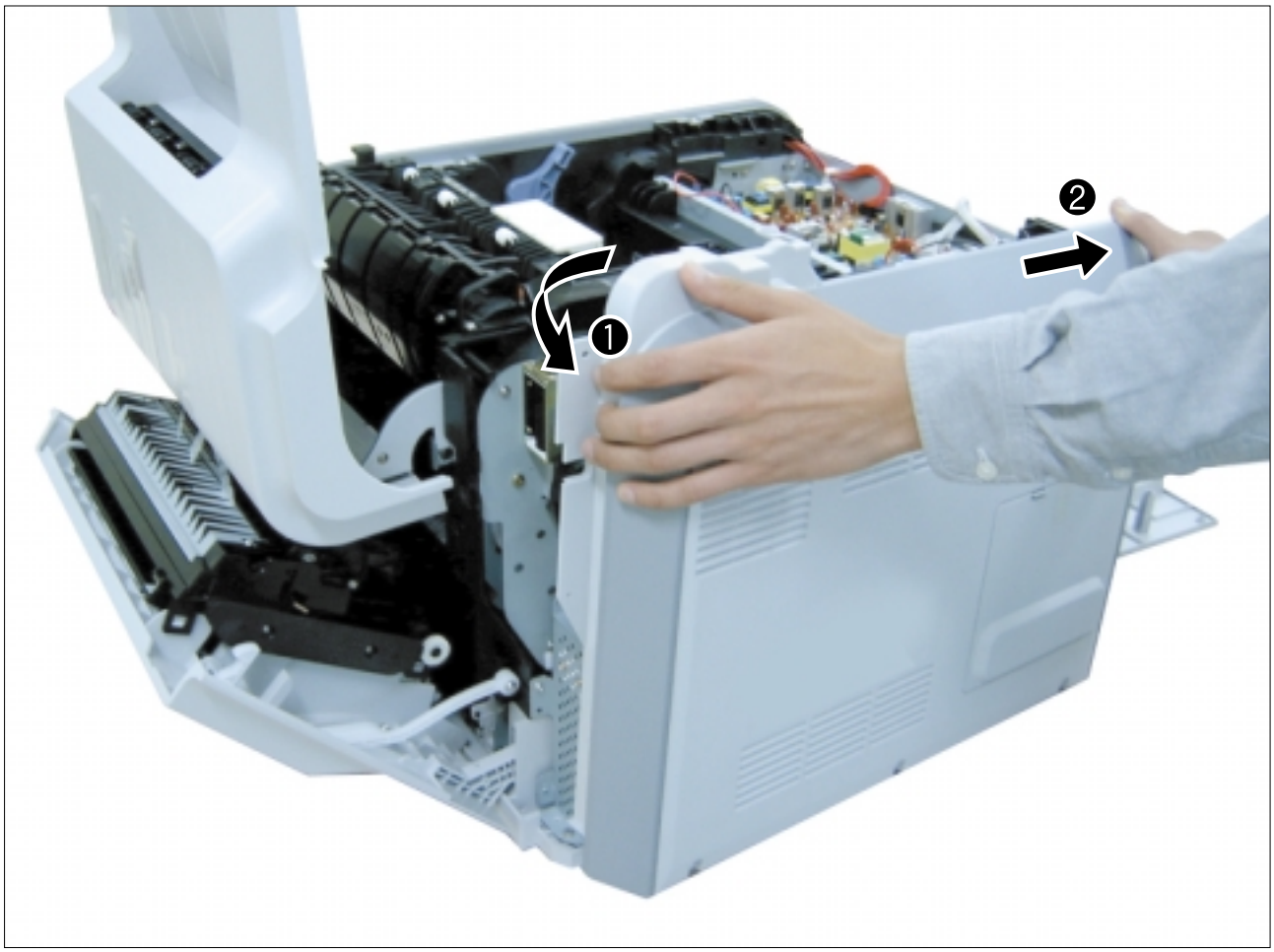
>> Before disassembling it:

*Open the **duplex cover, the DEVE cover** and the **exit cover**. (Refer to 6.3.3)
Remove the **top cover**. (Refer to 6.4.1)

1) 1) Remove 10 screws.
A: Top 2 EA (3 * 10 Silver)
B: Side 3 EA (3 * 10 Silver)
C: Bottom 3 EA (4 * 10 Silver)
D: Rear 2 EA (3 * 10 Silver)
E: NPC(If fitted) 2EA(3 * 10 Silver)



2) Take out the Rear Cover as shown below.

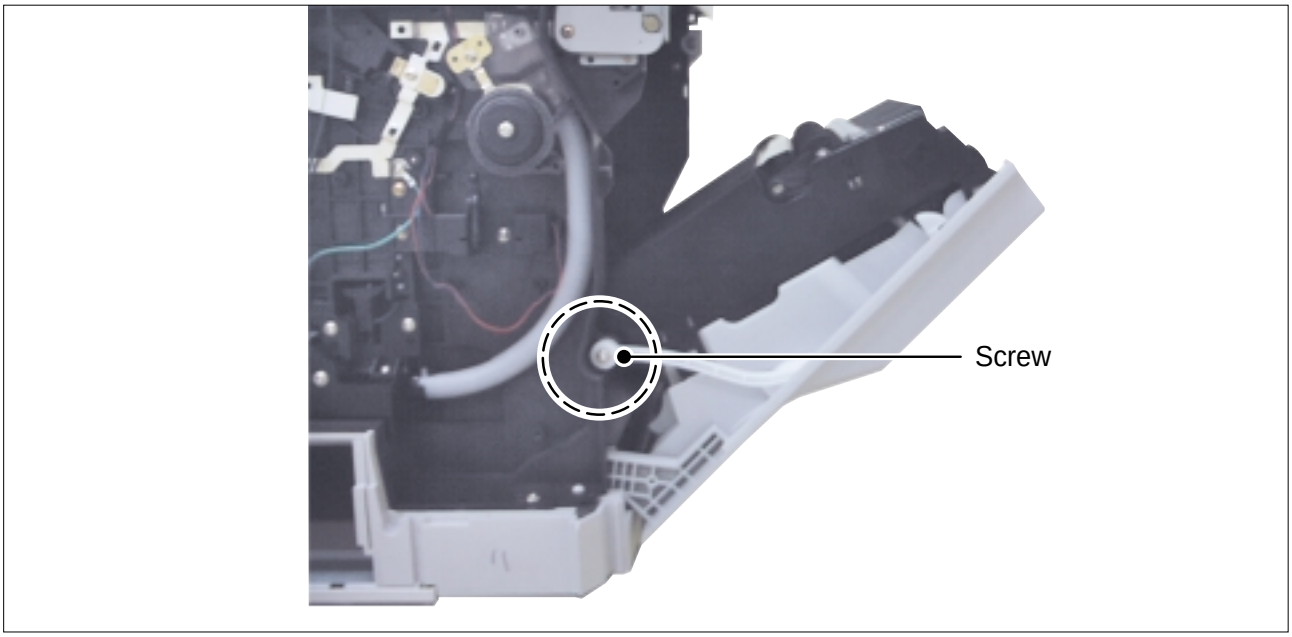


6.4.4 Duplex Cover Ass'y and Transfer Roller (T2)

>> Before disassembling it:

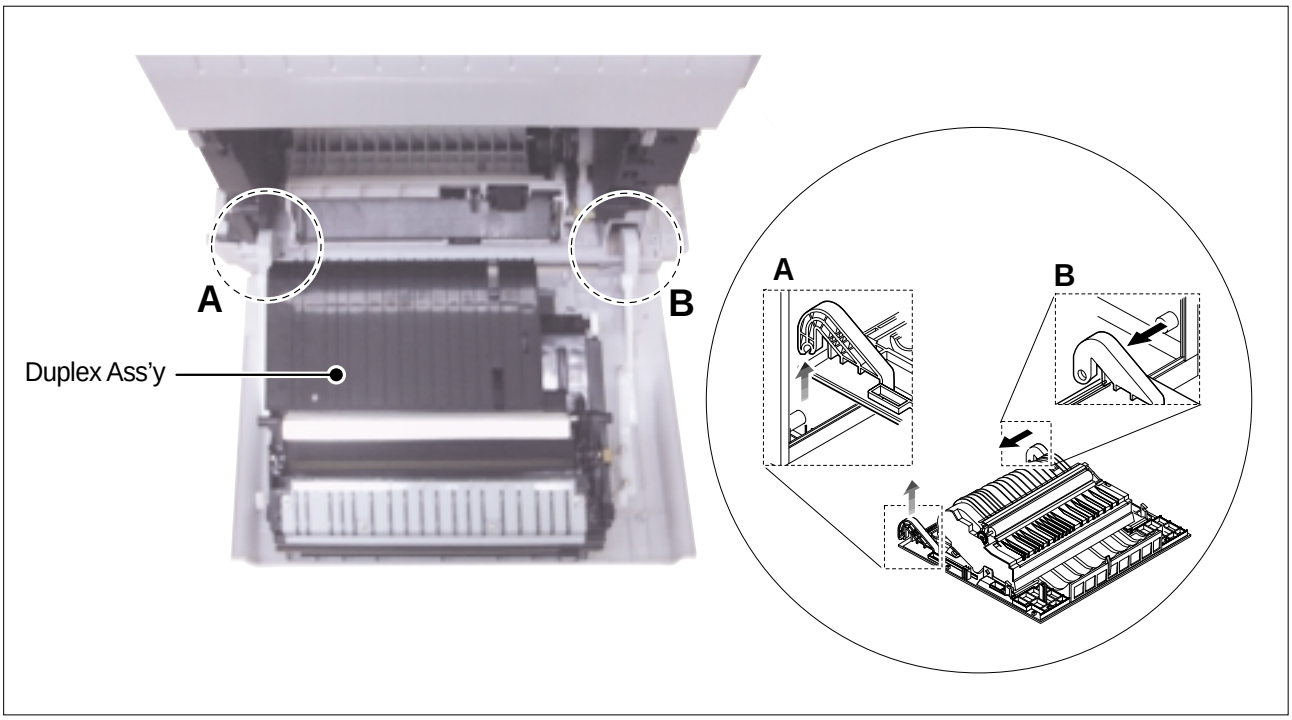
* Open the duplex cover, the DEVE cover and the exit cover. (Refer to 6.3.3)
* Remove the front cover and top cover. (Refer to 6.4.1)
* Remove the rear cover. (Refer to 6.4.3)1)

1) Release 2 hinge screws (3*10 silver) - one on each side of the duplex unit.

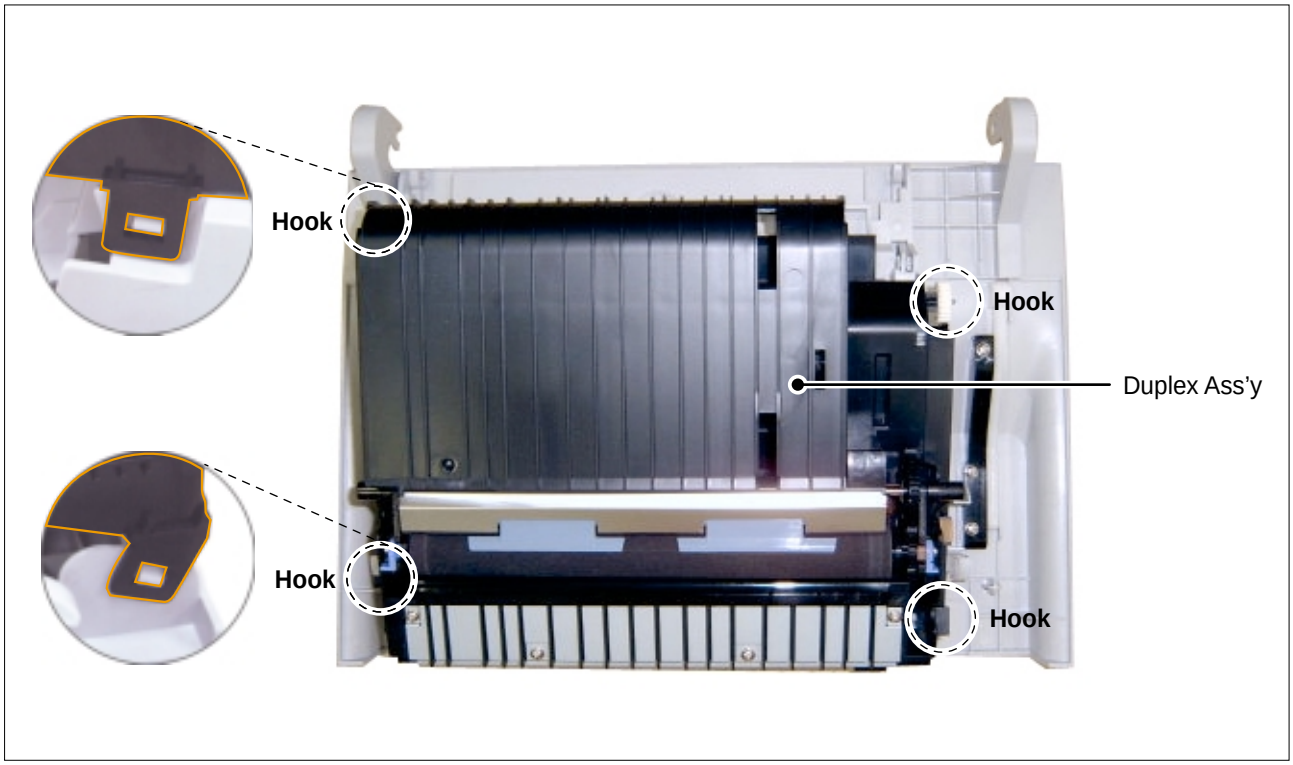


2) Remove the duplex cover ass'y by pulling it in the direction shown by the arrows in A and B below.

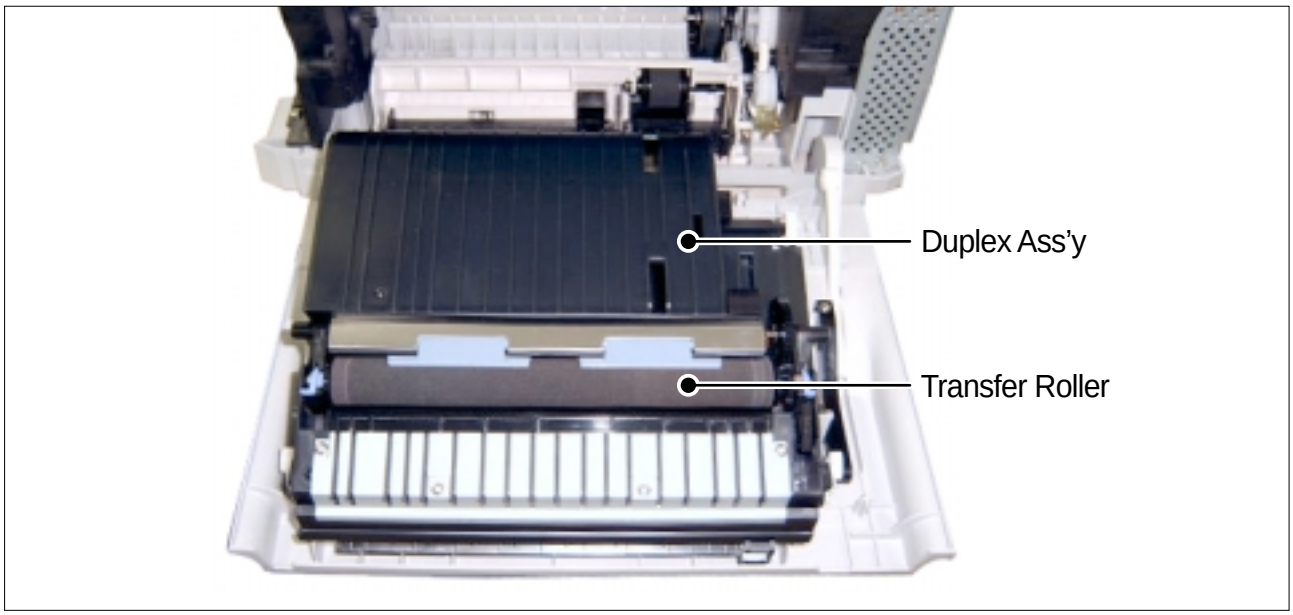
* A: Lift up the left side section.
* B: Remove the duplex cover ass'y by pulling the right side section towards the left.



3) Release 4 hooks on the right and left side with a flat bladed screwdriver and then remove the duplex ass'y.



4) Remove the transfer roller by turning the bush on each end of the roller

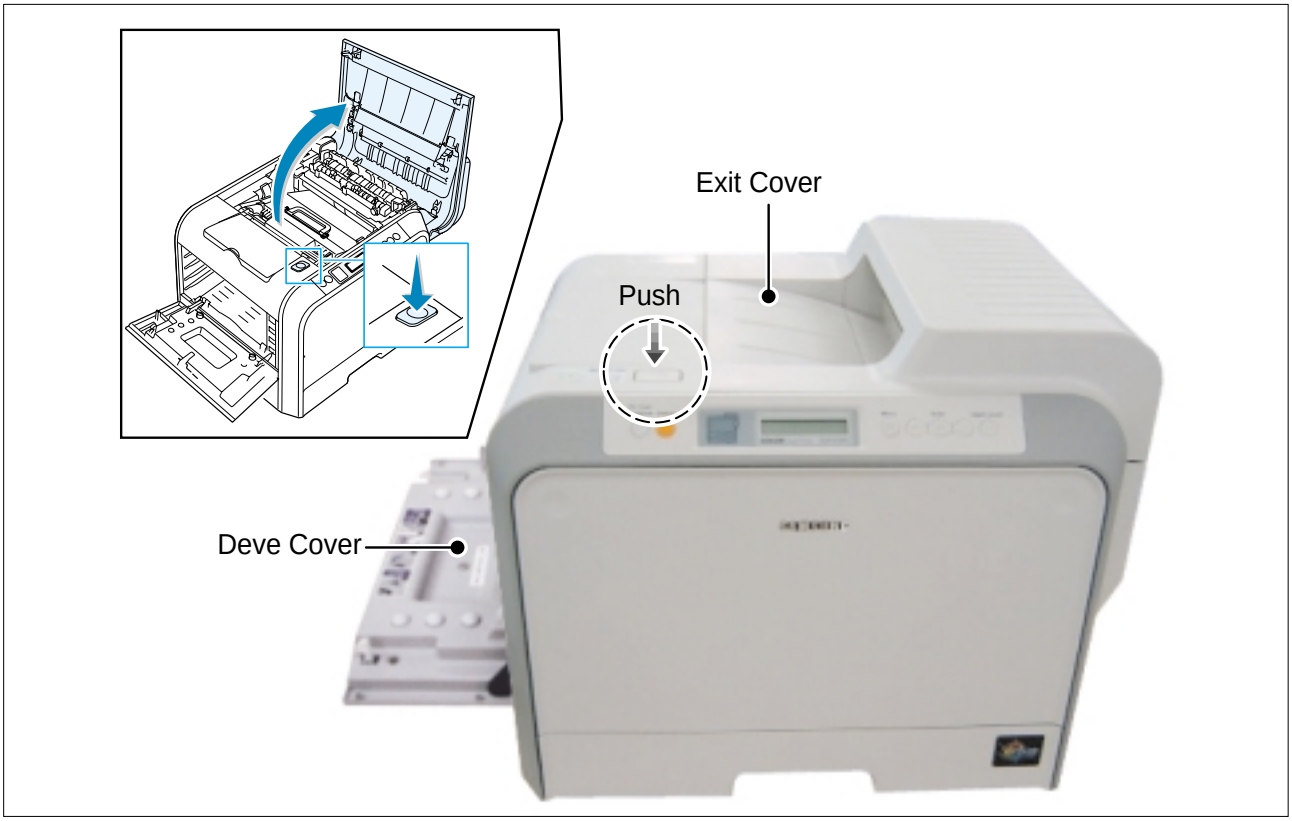


6.4.5 Fuser

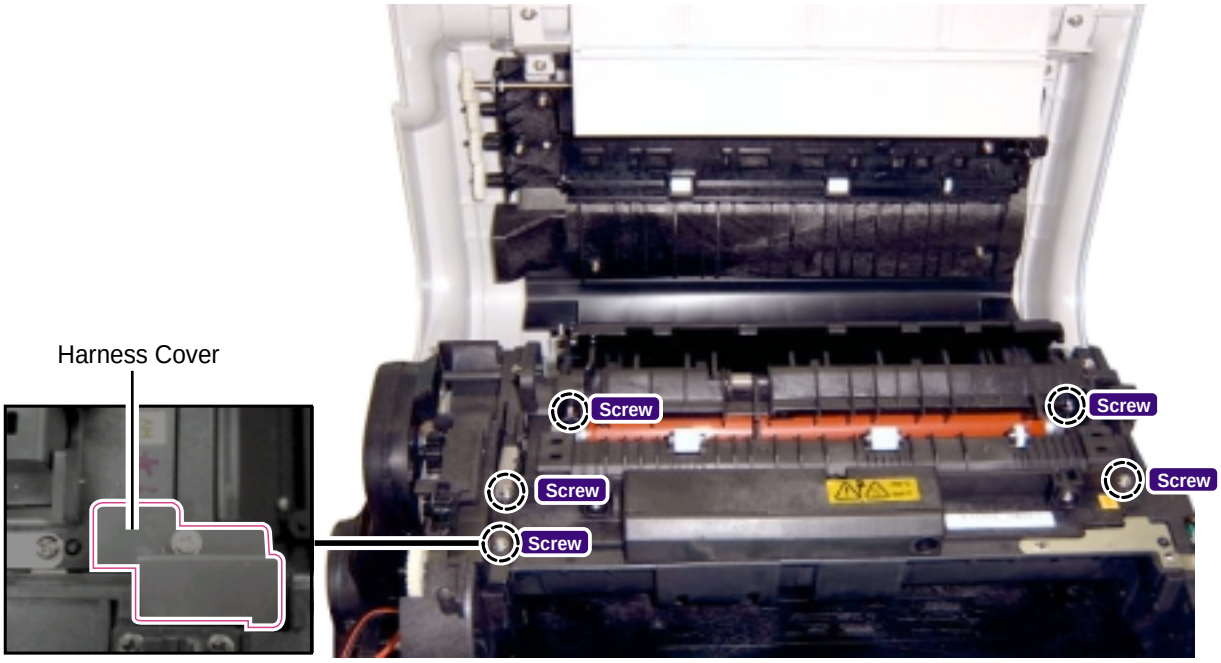
1) Open the DEVE cover

Caution: Before opening the exit cover, completely open the DEVE cover until it is at right angles to the main frame and the toner cartridges are ejected

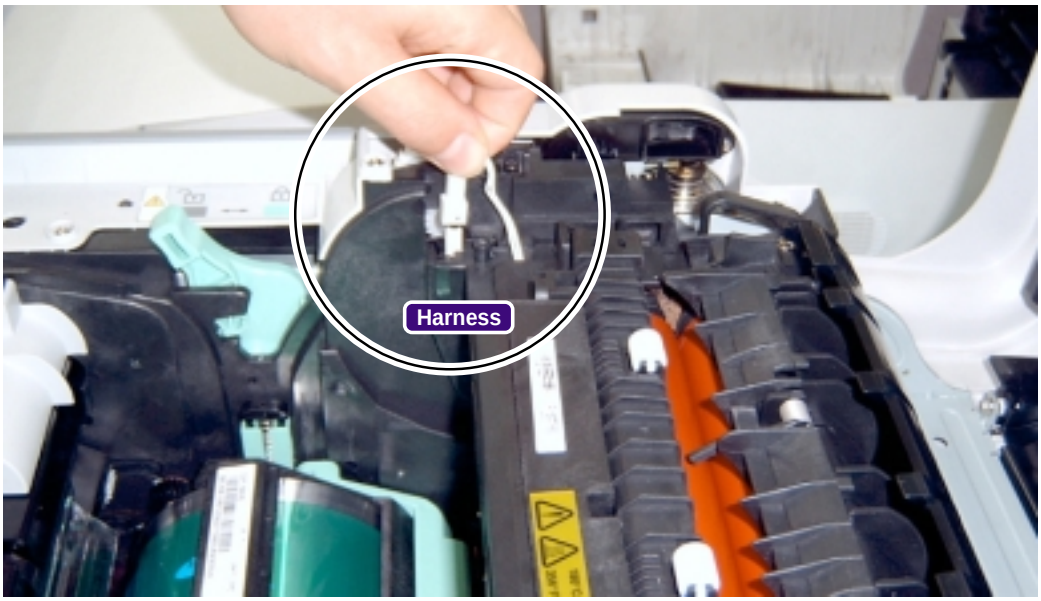
2) Open the exit cover.



3) Release 5 screws (3*10 silver) and then remove the harness cover.



4) Remove one harness.



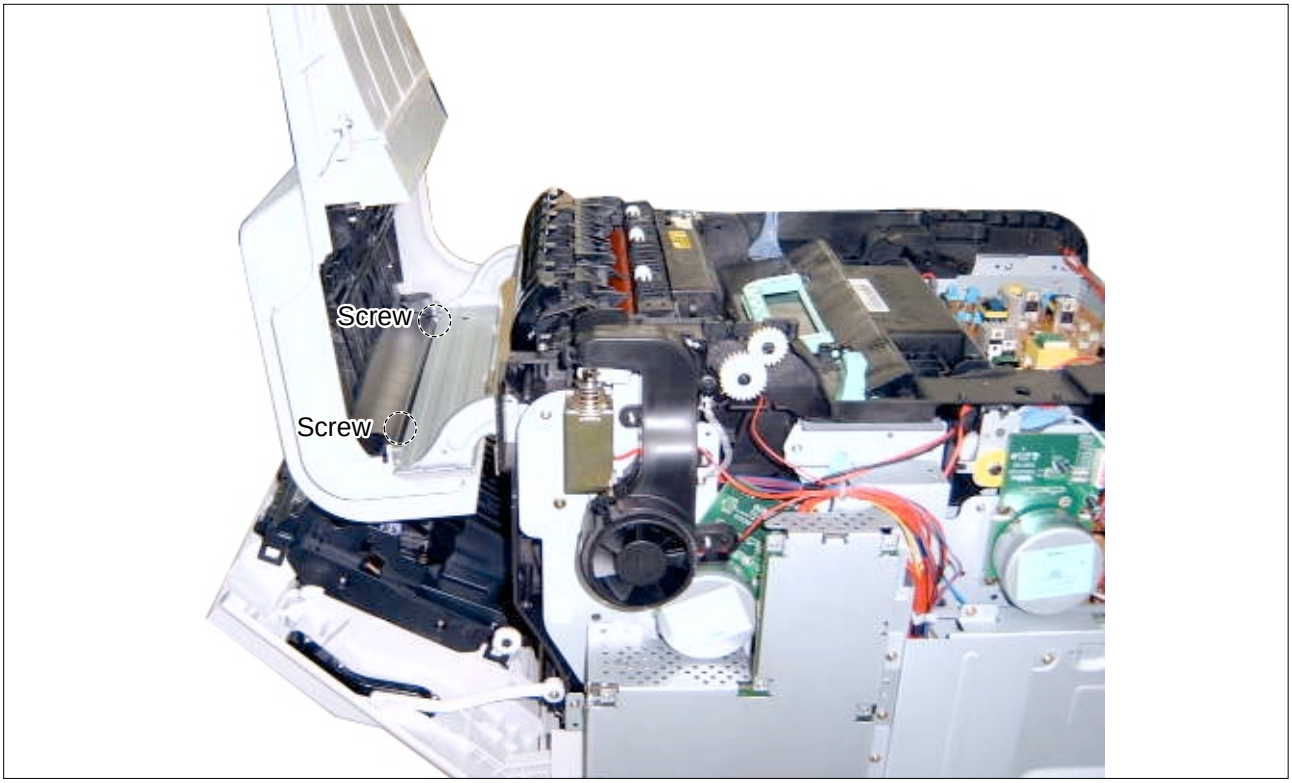
5) Remove the fuser by holding both sides of the fuser and then pulling the fuser upwards.

6.4.6 Exit Cover

>> Before disassembling it:

* Remove the **front cover** (Refer to 6.4.1)
* Remove the **rear cover** (Refer to 6.4.3)
* Remove the **duplex cover** (Refer to 6.4.4)
* Remove the **fuser** (Refer to 6.4.5)

1) Support the Exit Cover and remove the 2 screws (4*10 Silver) indicated using a long blade screwdriver from inside the OPC cavity. Remove the Exit Cover.



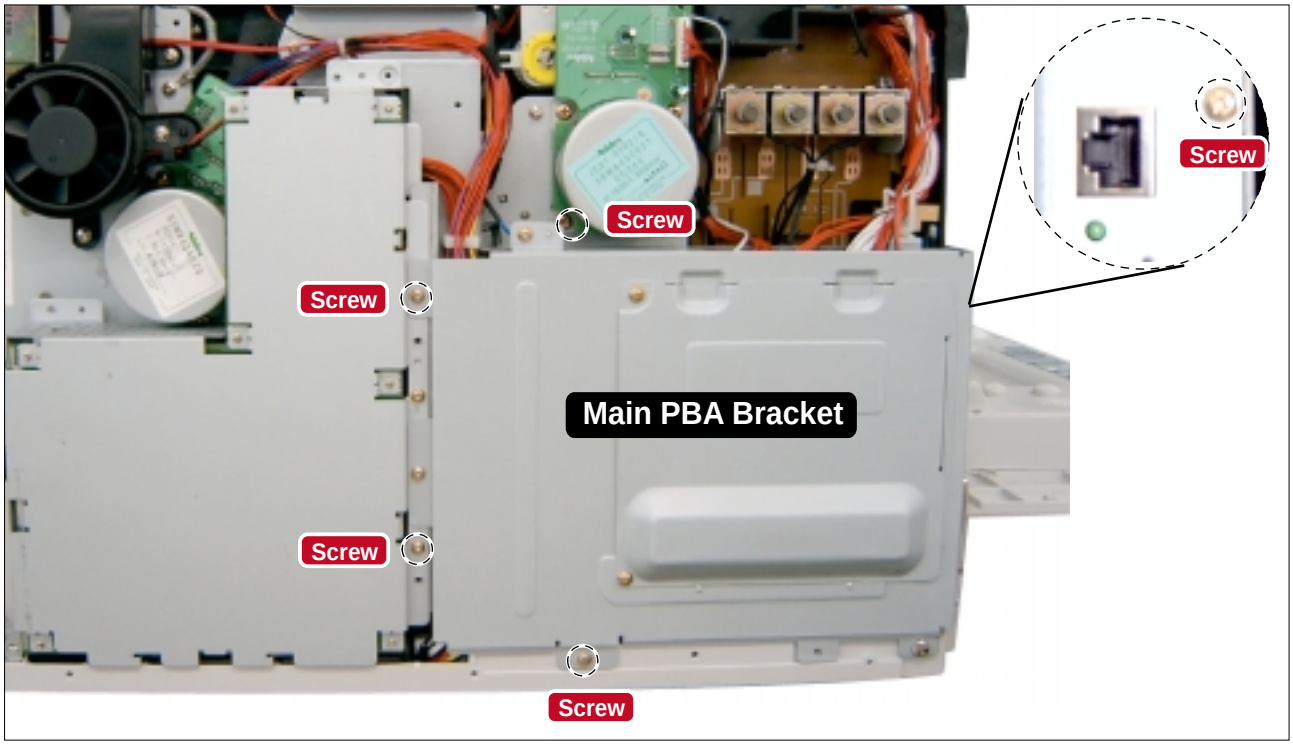
2) Remove the exit cover.

6.4.7 SMPS and Main PBA

>> Before disassembling it

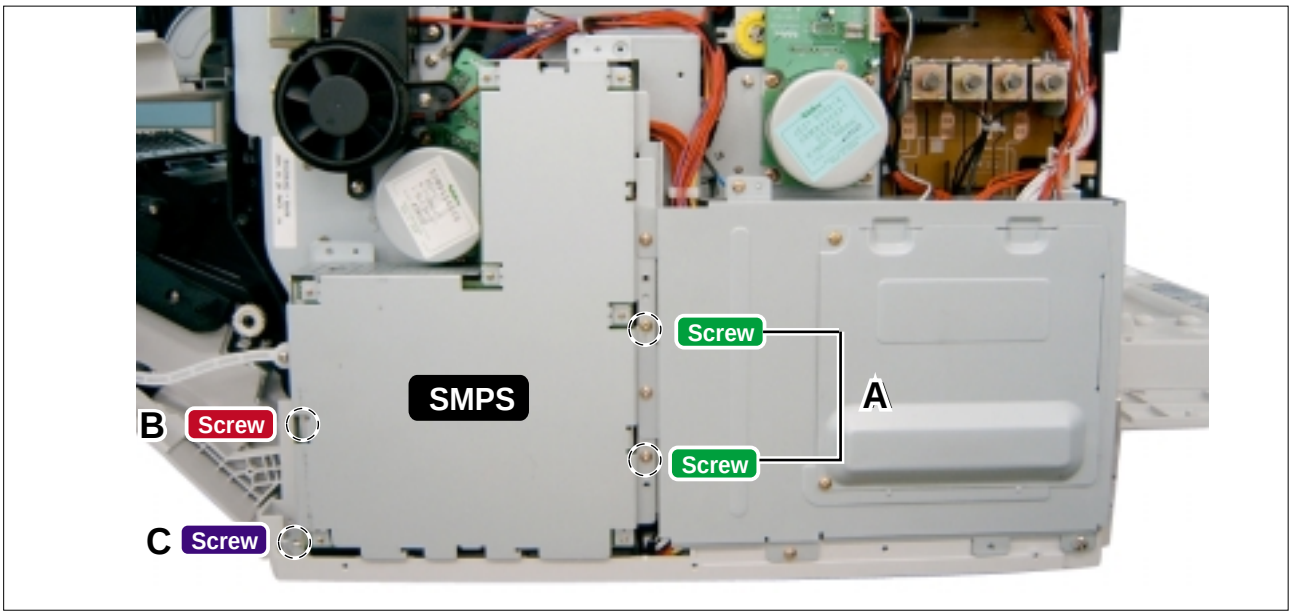
*Remove the **rear cover** (Refer to 6.4.3)

1) Release 5 screws (3*6 machine screw, gold) from the main PBA bracket.

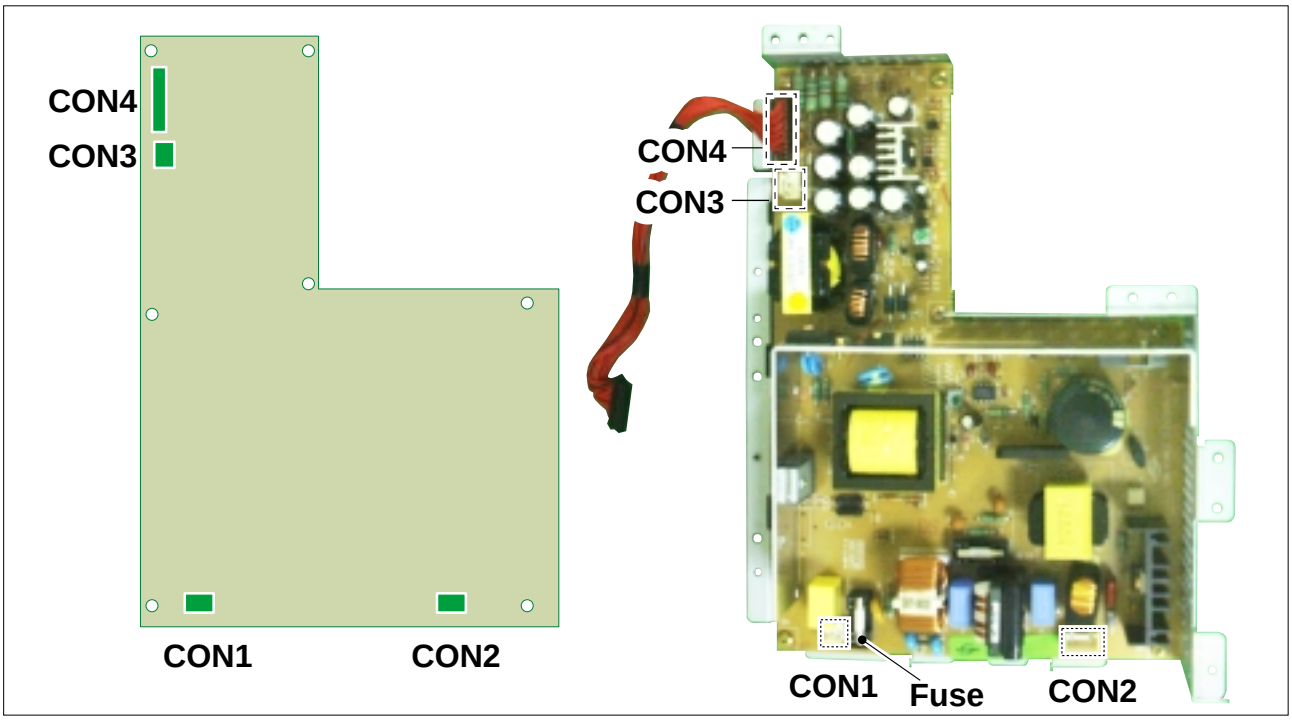


2) Release 4 screws from the SMPS.
Release one screw (3*10 silver) from the harness guide.

- **A: Right side 2EA (3 * 6 Gold)**
- **B: Left side 1EA (3 * 10 Silver)**
- **C: Bottom 1EA (4 * 10 Silver)**



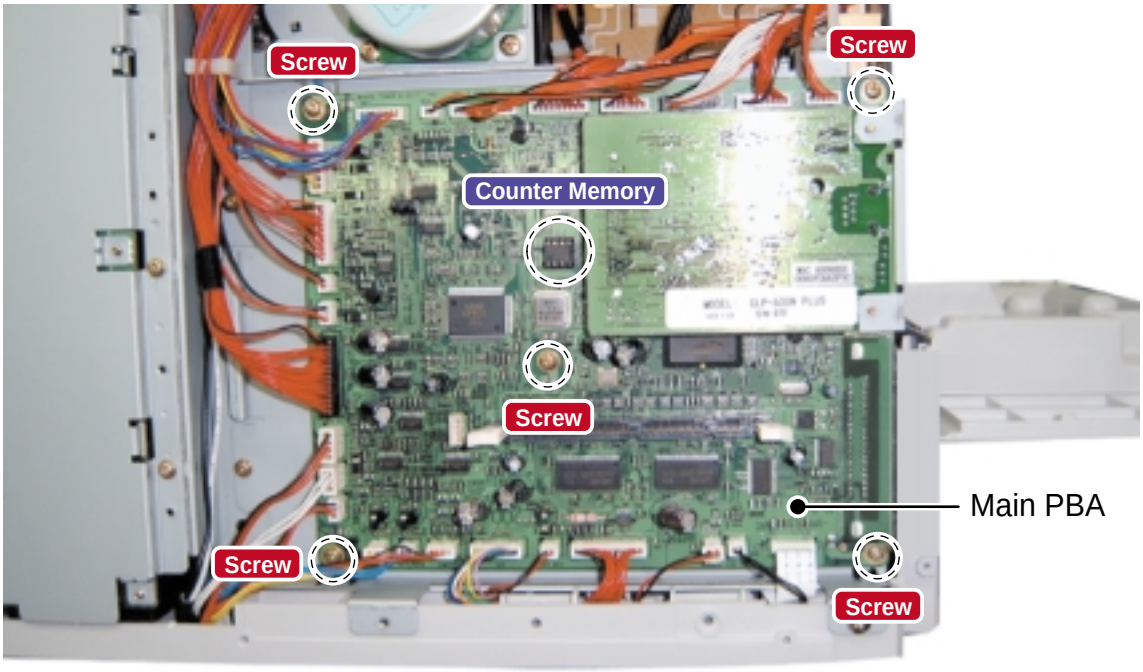
3) Remove 4 harnesses from the SMPS.

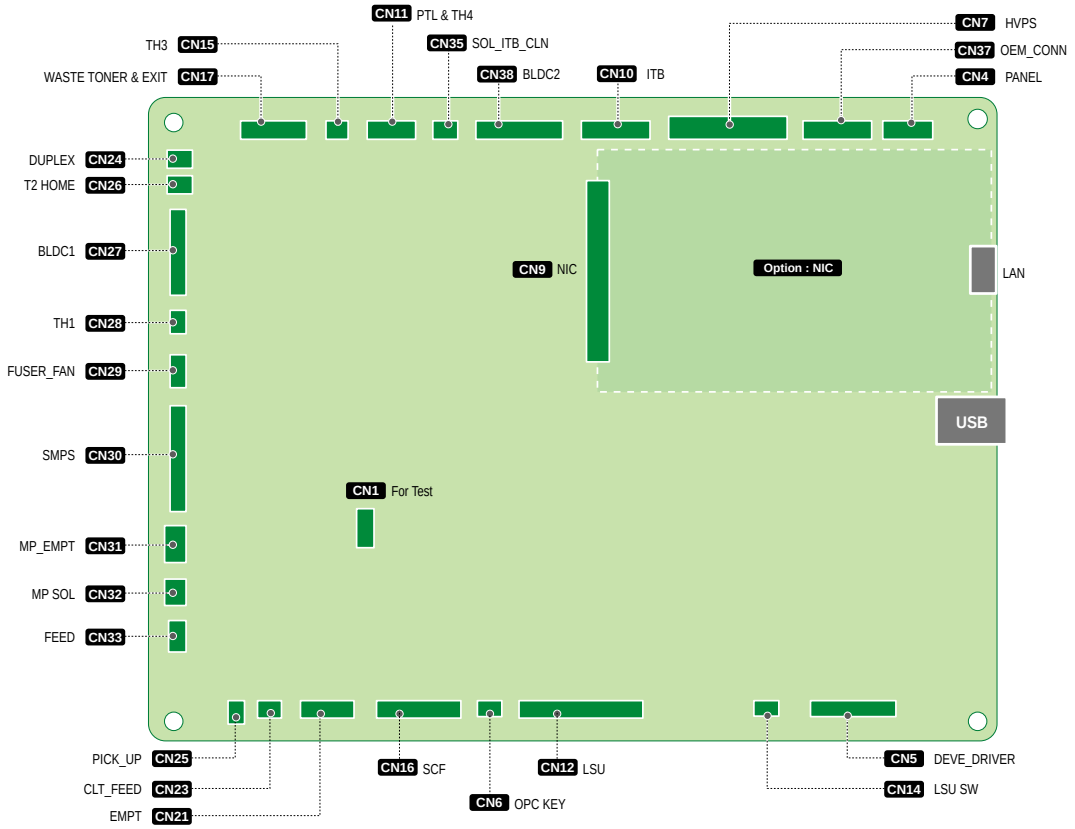


4) Remove all harness connected to the main PBA.

5) Release 5 screws (3*6 machine screw, gold) from the main PBA and then remove the main PBA.

6) When replacing the Main PBA the Counter memory chip (U36) must be transferred to the new PBA.



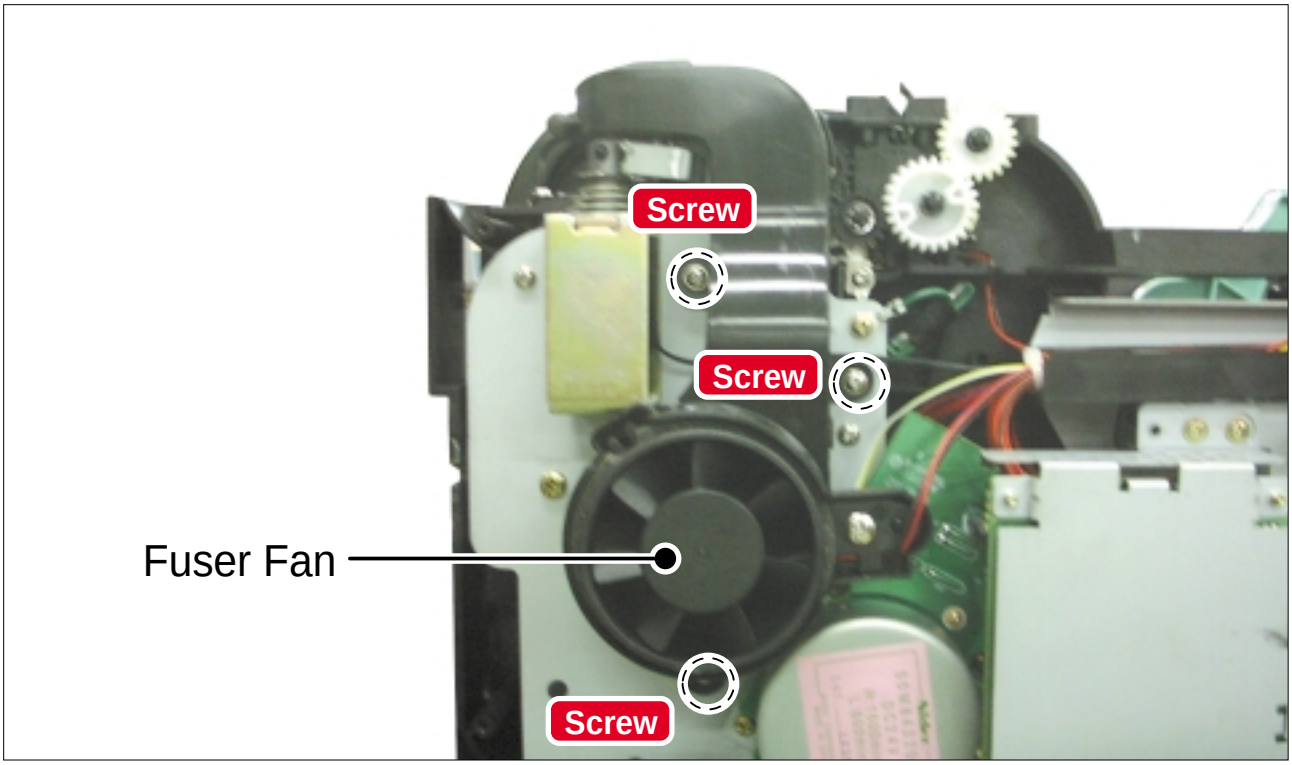


6.4.8 Fuser Fan

>> Before disassembling it:

* Remove the **top cover** (Refer to 6.4.1)
* Remove the **rear cover** (Refer to 6.4.3)
* Remove the **main PBA bracket.** (Refer to 6.4.7)

1) Release 3 screws (3*10 silver) remove one harness from the main PBA and then take out the fuser fan.

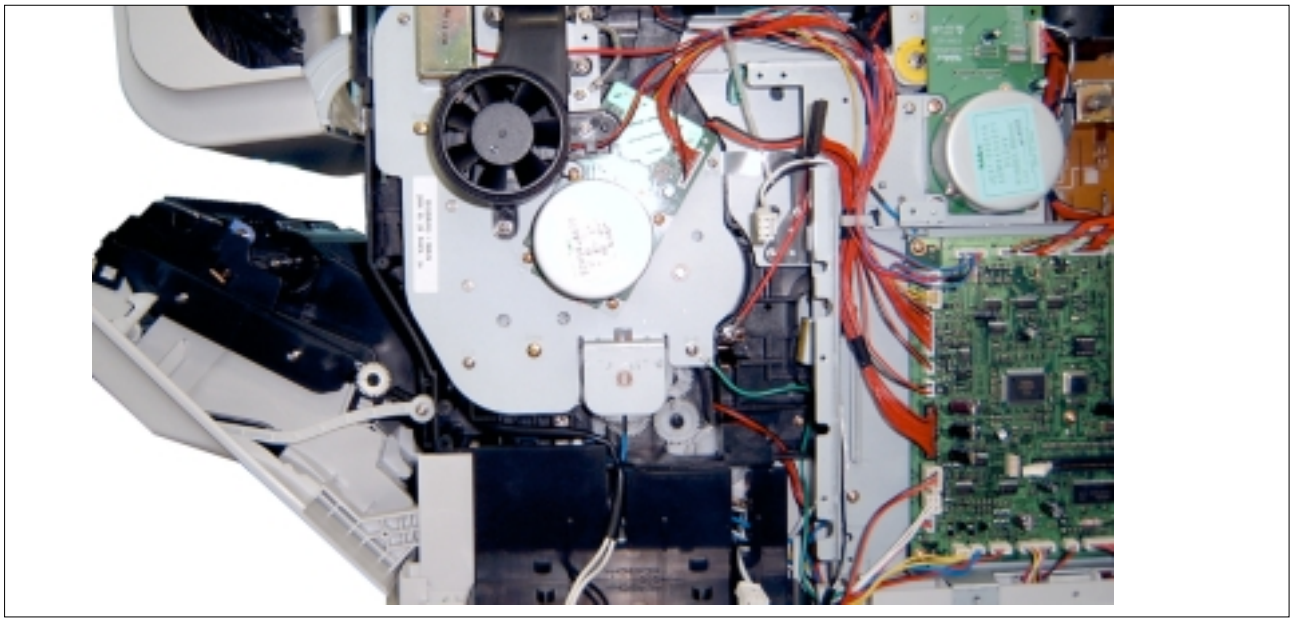


6.4.9 Main Drive Ass'y

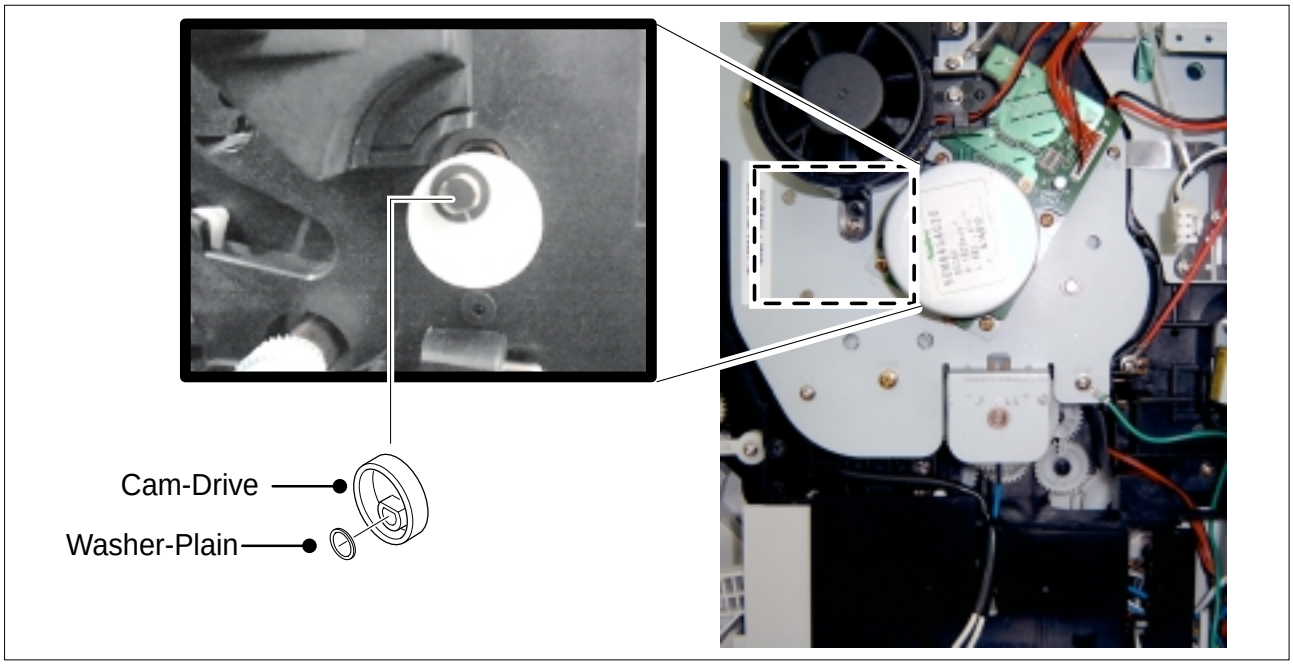
>>Before disassembling it:

* Remove the **rear cover** (Refer to 6.4.3)
* Remove the **fuser** (Refer to 6.4.5)
* Remove the **SMPS** (Refer to 6.4.7)
* Remove the **fuser fan** (Refer to 6.4.8)

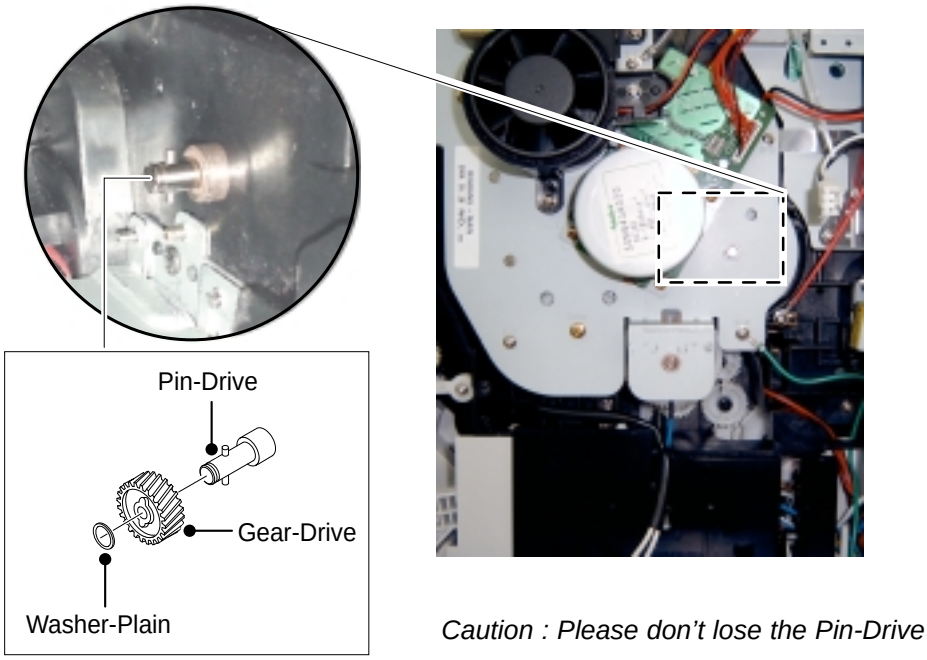
1) Remove all harnesses from the harness guides.



3) Look inside the OPC drum cavity and locate the T2 cam. Remove the washer using tweezers and then remove the T2 cam.

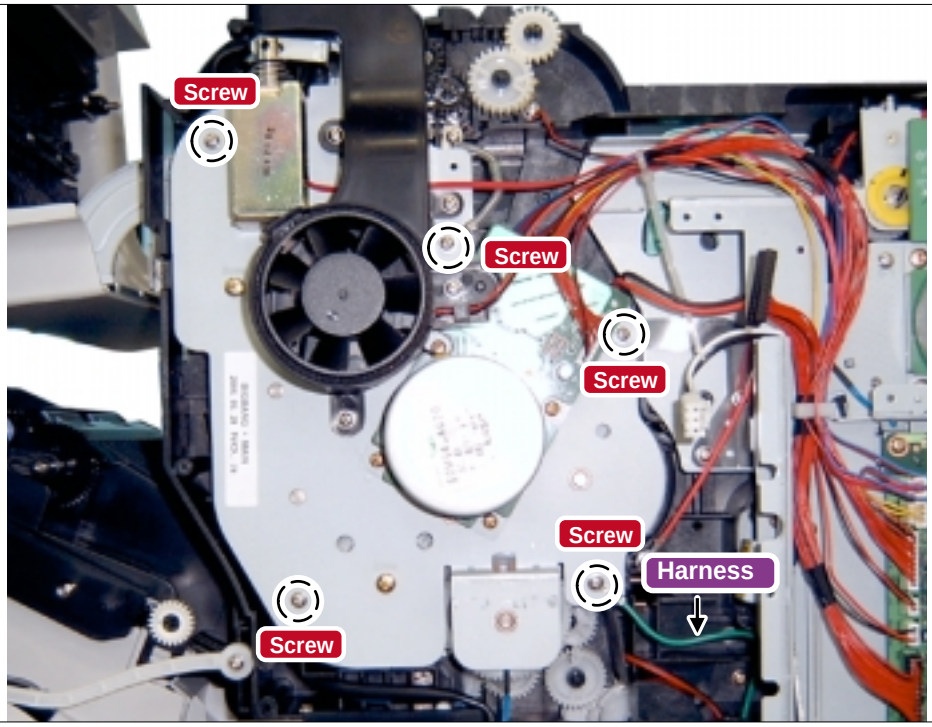


4) Remove the washer using tweezers and then remove the OPC gear and pin. (The OPC gear can be found inside the printer after removing the OPC drum unit. Take care that the pin is not lost as you remove the gear.)



Caution : Please don't lose the Pin-Drive

5) Remove the motor harness.
Release 5 screws (3*10 silver) and then take out the main drive ass'y.

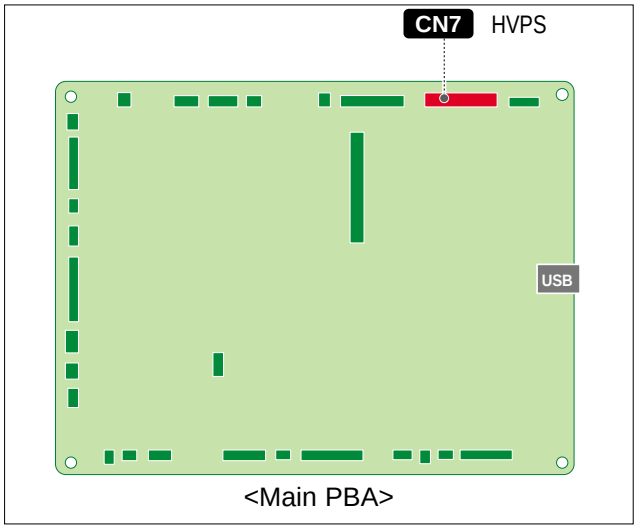


6.4.10 HVPS (High Voltage Power Supply)

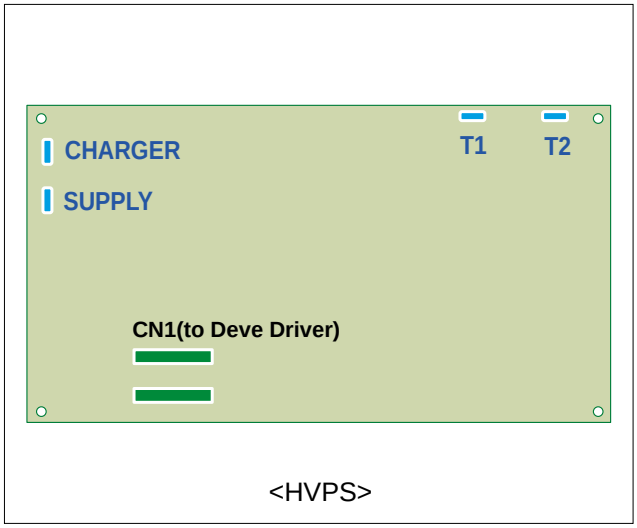
>>Before disassembling it:

* Disassemble the **front cover & top cover** (Refer to 6.4.1)
* Disassemble the **rear cover** (Refer to 6.4.3)
* Disassemble the **main PBA bracket** (Refer to 6.4.7.)

1) Remove one harness from the main PBA

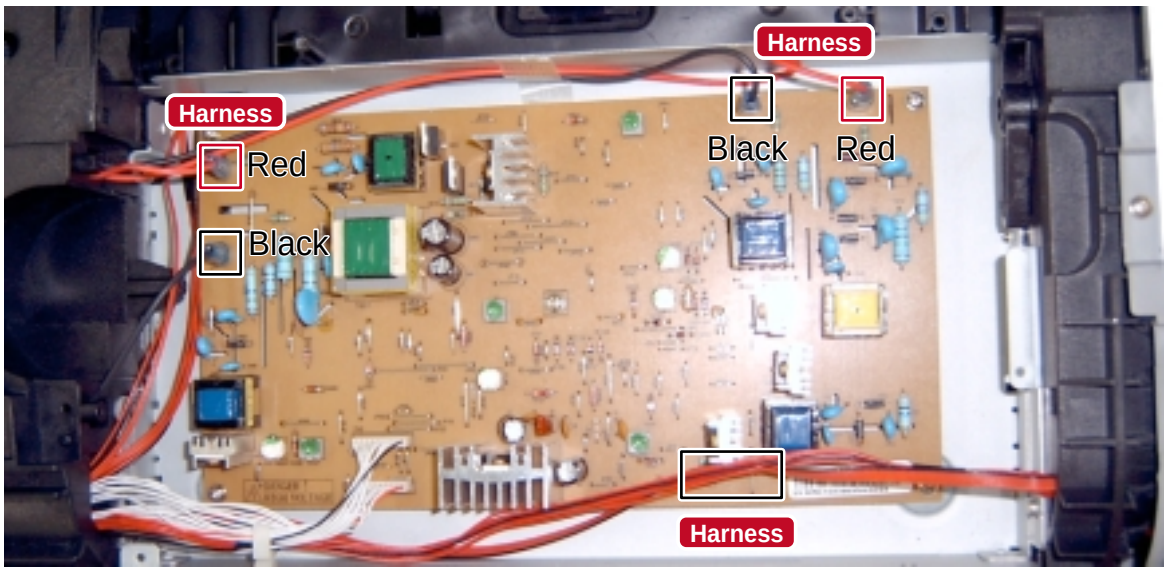


<Main PBA>

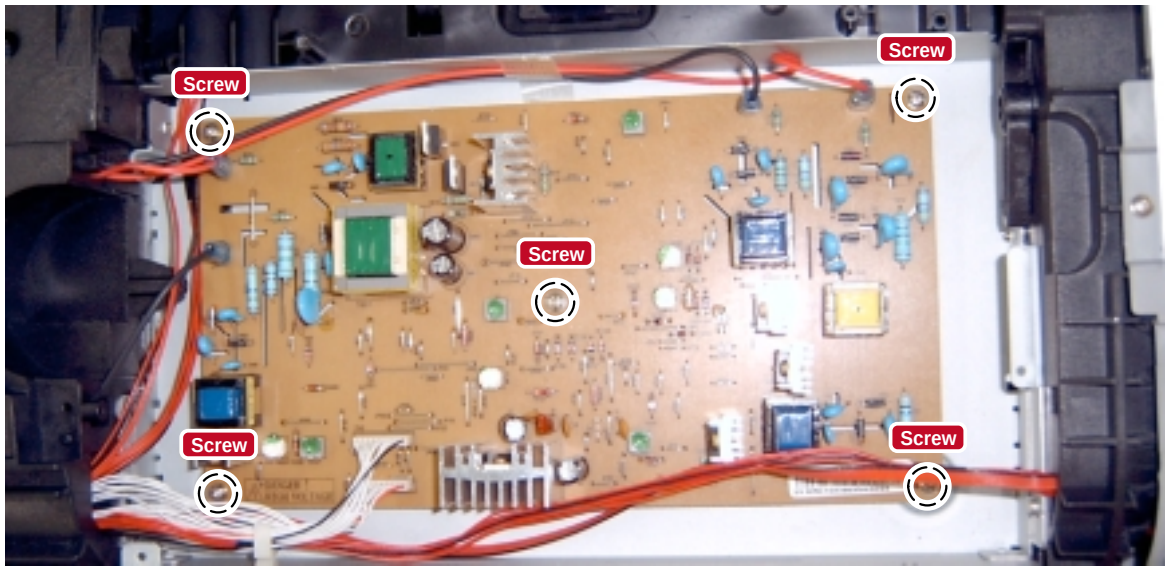


<HVPS>

2) Remove one harness and 4 high-voltage harnesses from the HVPS.



3) Remove 5 screws (3*6 machine screw, silver) and then remove the HVPS.

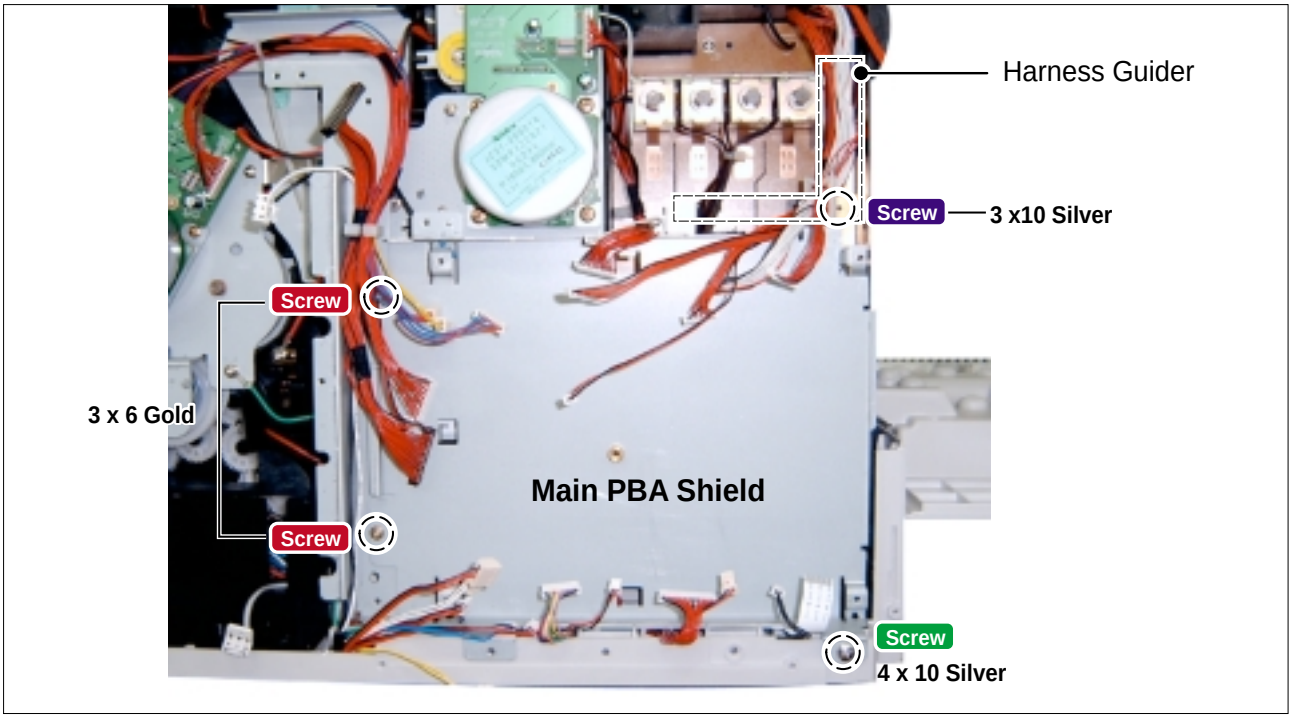


6.4.11 Deve drive ass'y

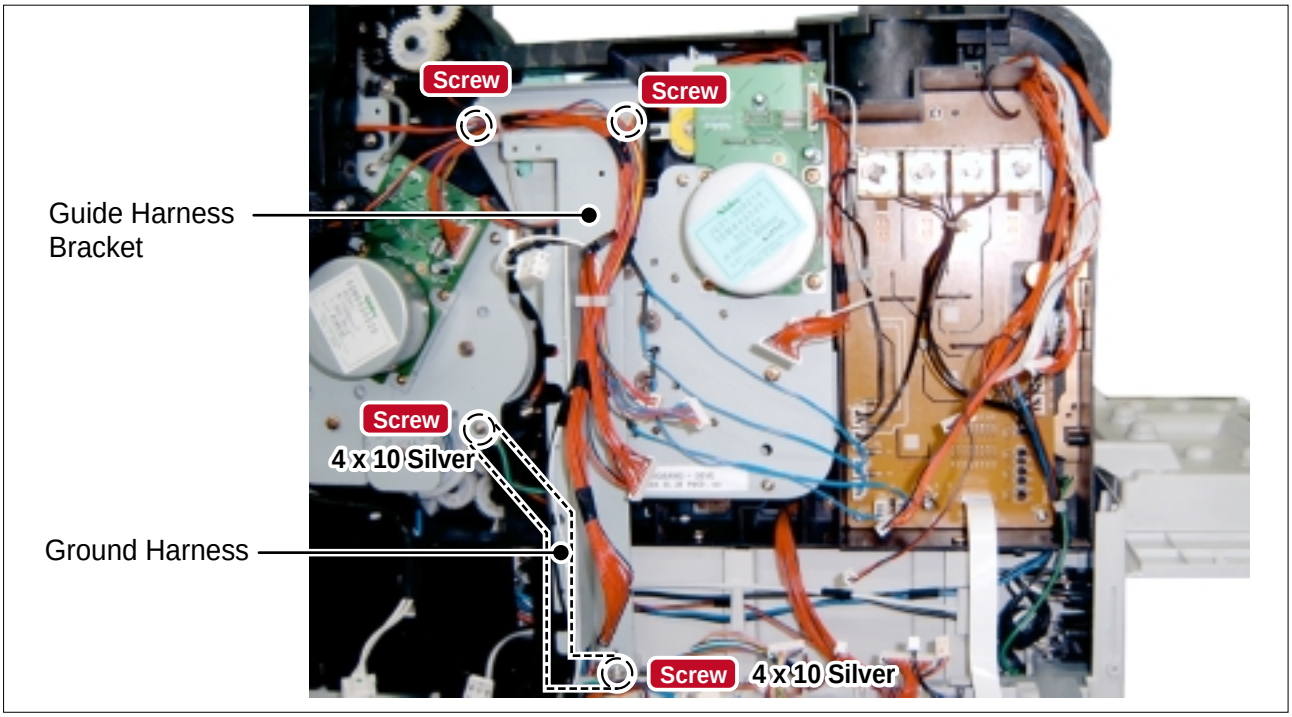
>>Before disassembling it:

* Disassemble the **rear cover** (Refer to 6.4.3)
* Disassemble the **main PBA** (Refer to 6.4.7)

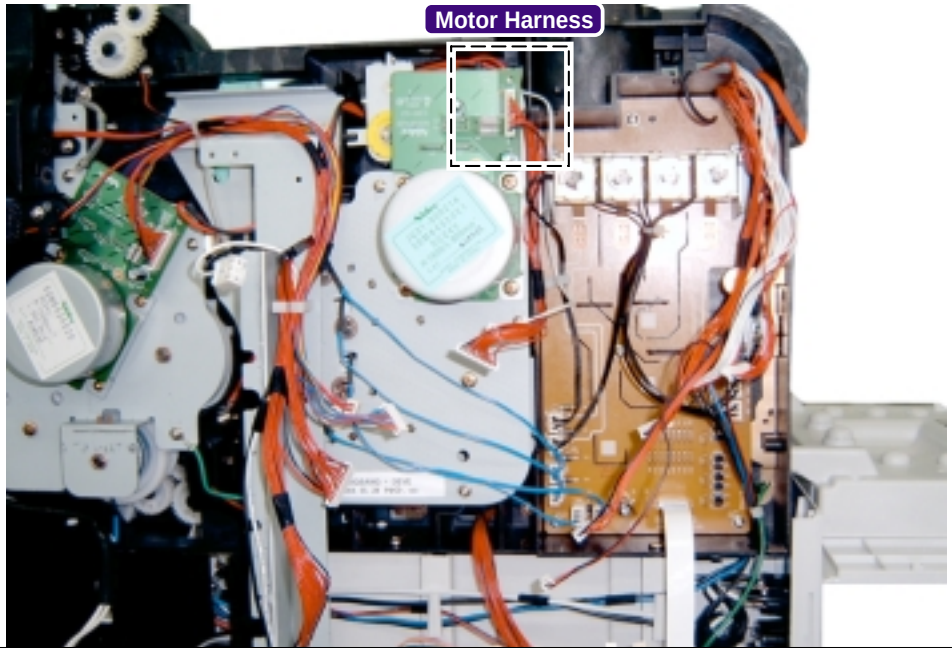
1) Remove the main PBA shield and harness guide by releasing 5 screws
(2 EA 3*6 machine screw, gold: 1 EA 3*10 silver, 1 EA 4*10 silver)



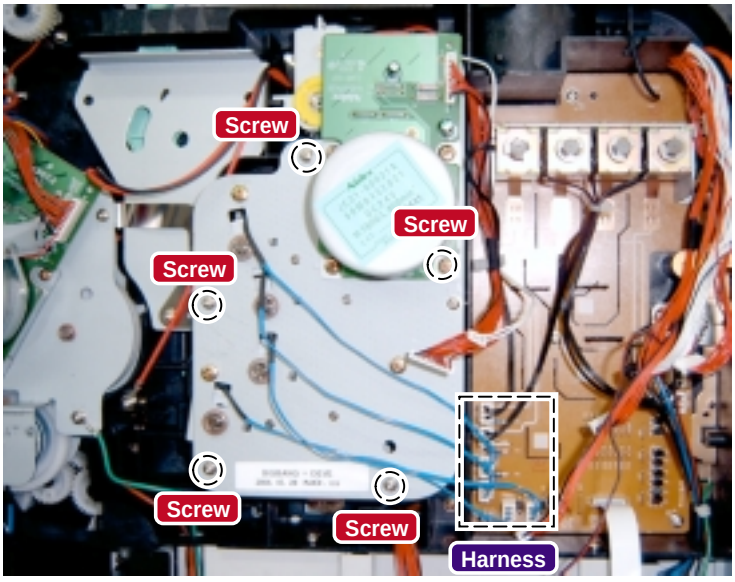
2) Remove the ground harness and the harness guide bracket by releasing 3 screws
(2 EA 3*6 machine screw, gold: 1 EA 4*10 silver).

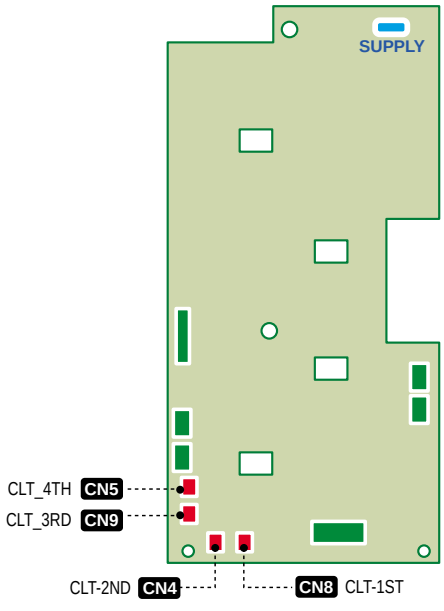


3) Separate the harness from the DEVE motor.



4) Release 5 screws (3*10 silver) from the DEVE drive ass'y.
Remove 4 harnesses connected to the DEVE drive PBA and then remove the DEVE drive ass'y.



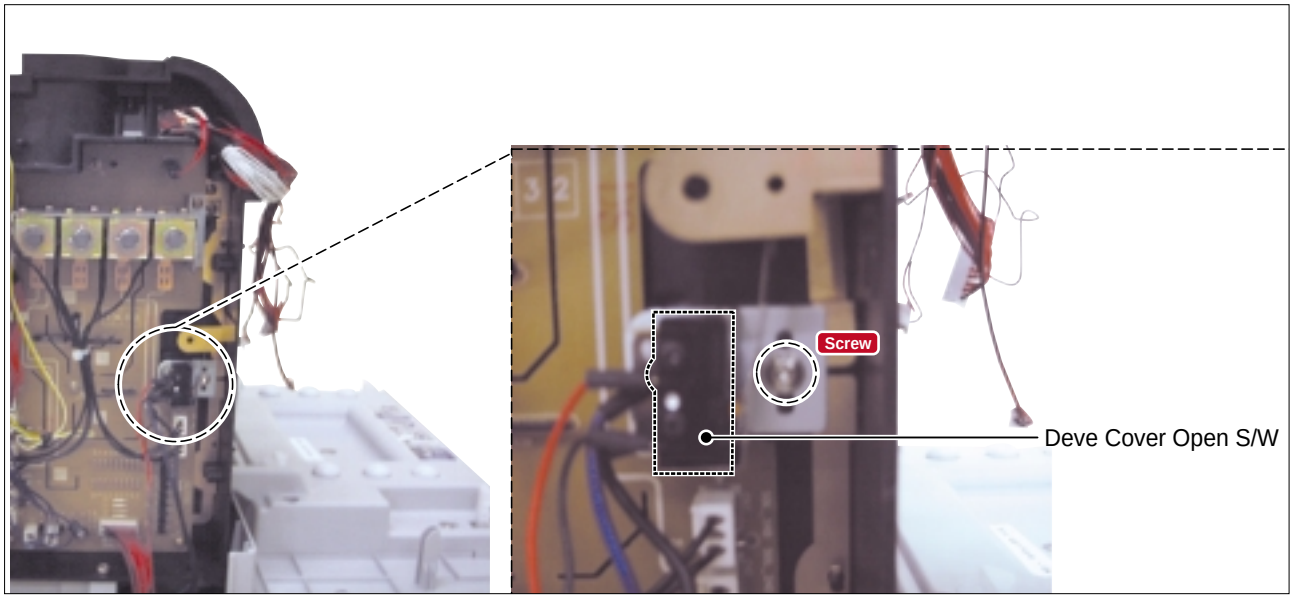


6.4.12 Deve drive PBA and DEVE cover open S/W

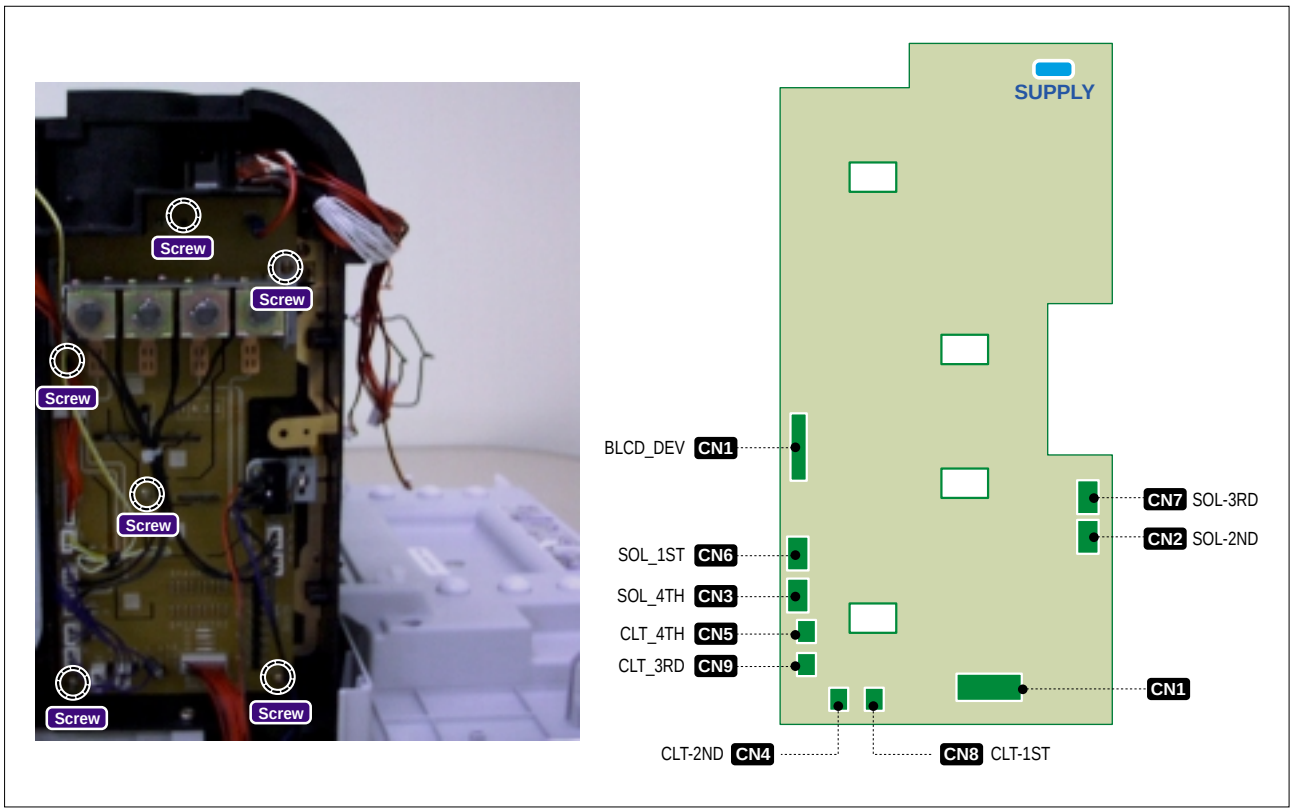
>>Before disassembling it:

* Disassemble the **rear cover** (Refer to 6.4.3)
* Disassemble the **main PBA** (Refer to 6.4.7)
* Disassemble the **main PBA bracket** (Refer to 6.4.7.2)

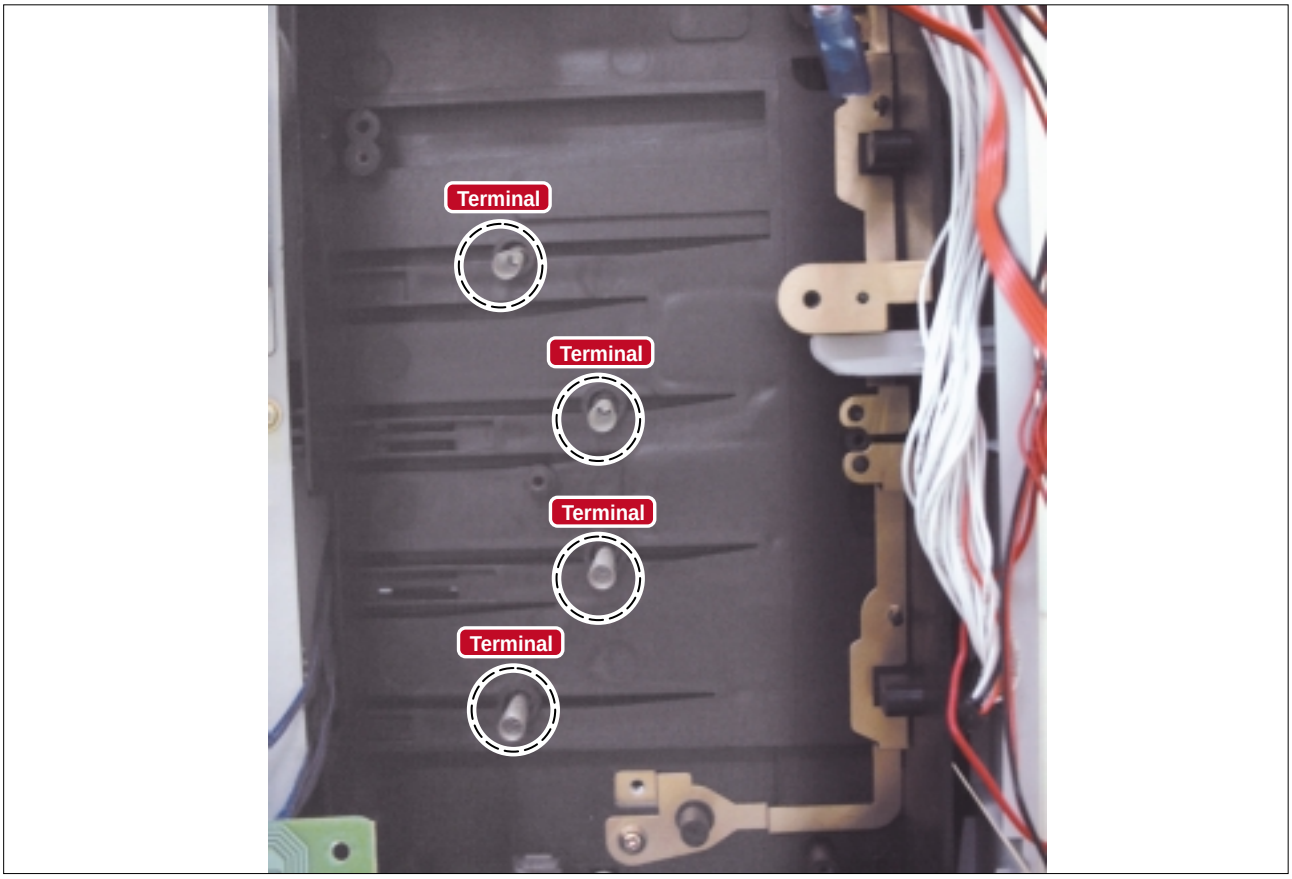
1) Release 1 screw (3*10 silver) and then take out the DEVE cover open S/W.



2) Remove all harnesses and 6 screws (3*10 silver) and then take out the DEVE drive PBA.



3) Remove 4 high-voltage terminals.

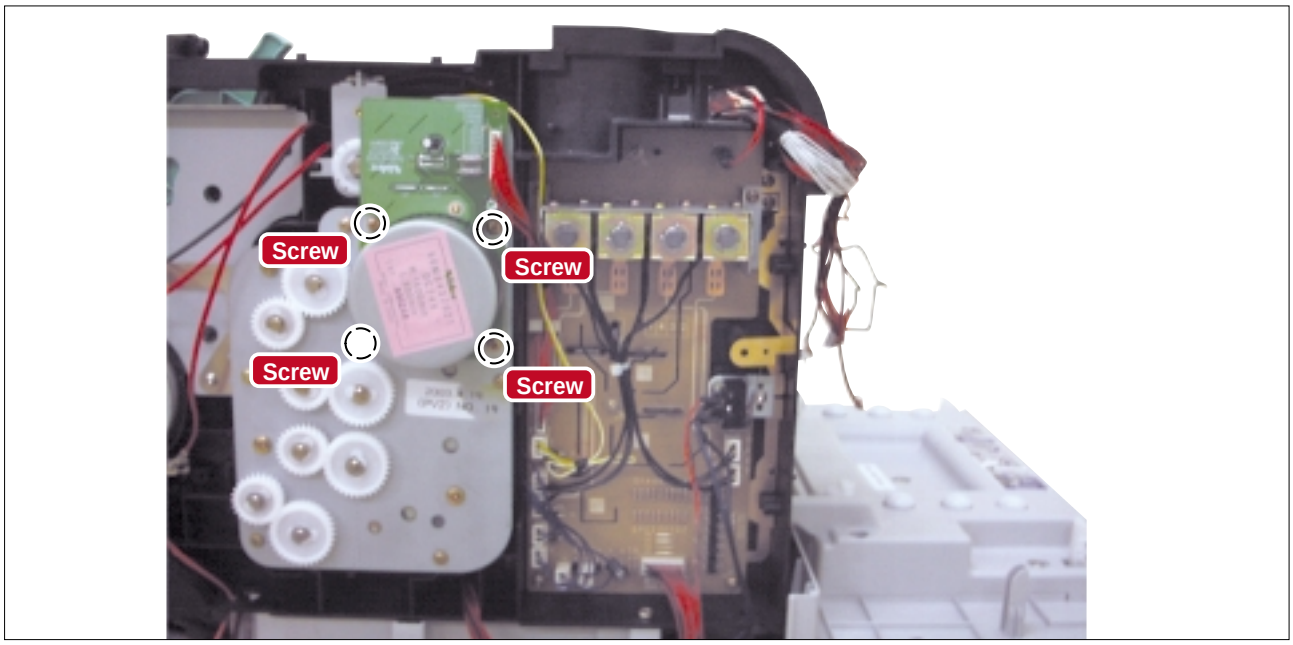


6.4.13 Deve Drive Motor ITB Cleaning Solenoid

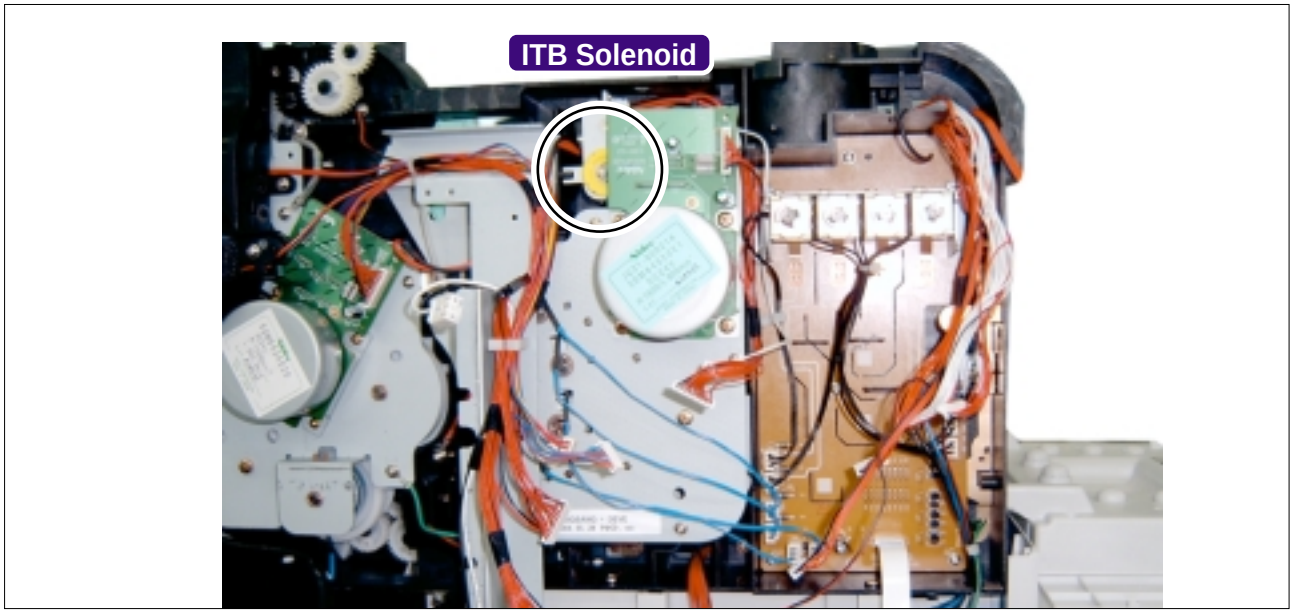
>>Before disassembling it:

* Disassemble the **rear cover** (Refer to 6.4.3)
* Disassemble the **main PBA** (Refer to 6.4.7)
* Disassemble the **main PBA bracket** (Refer to 6.4.7)
* Disassemble the **DEVE drive motor**. (Refer to 6.4.7)

1) Release 4 screws (3*6 gold) and then remove the DEVE drive motor.



2) Unplug one harness from the DEVE drive PBA and then remove the ITB cleaning solenoid.

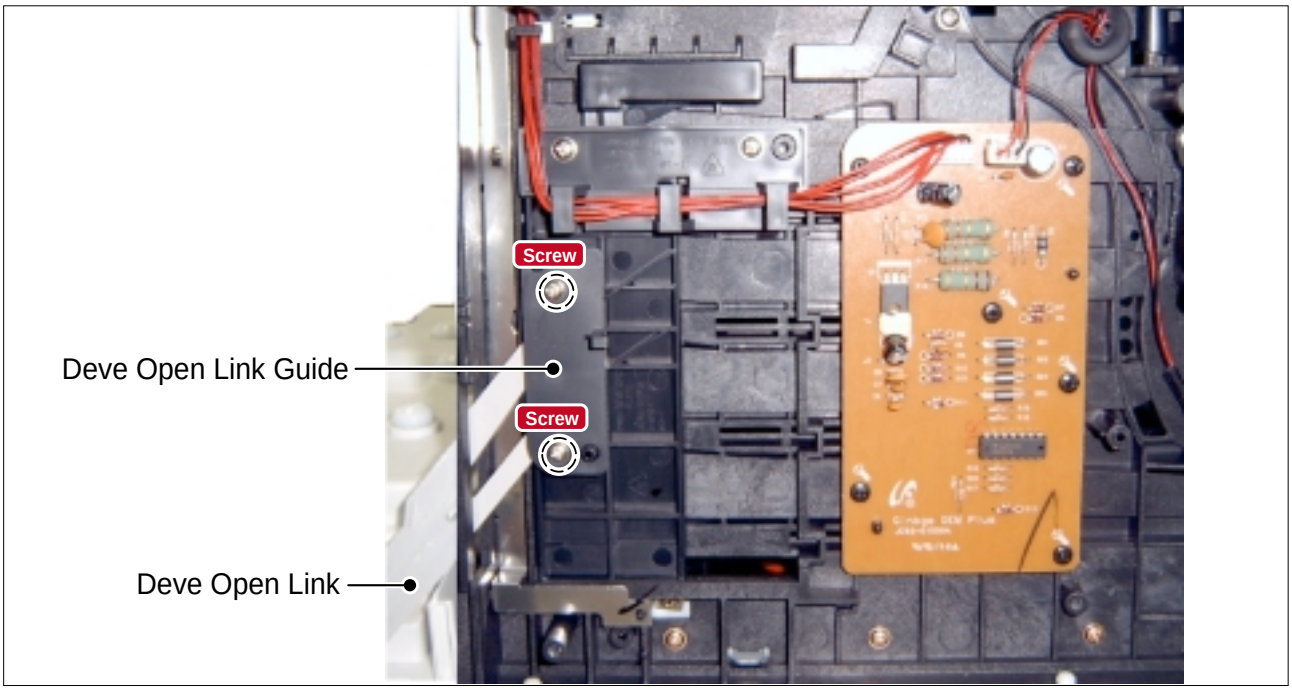


6.4.14 DEVE cover

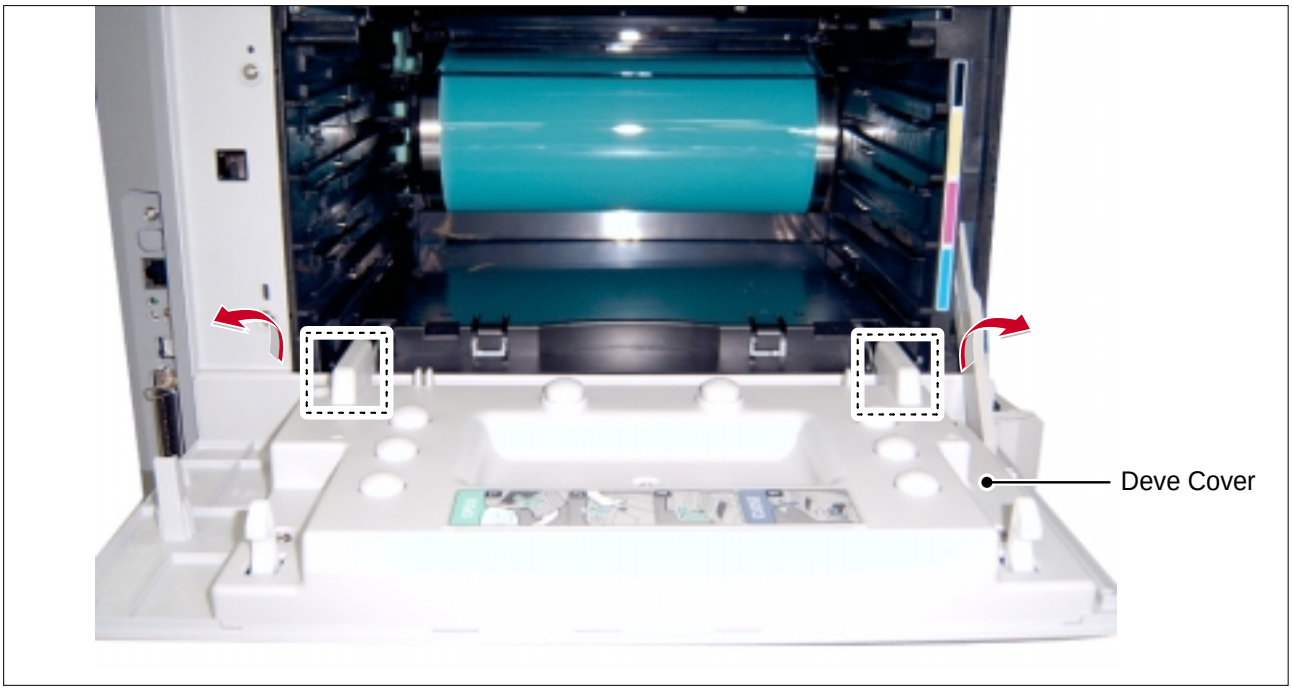
>> Before disassembling it:

* Remove **all consumption parts** (Toner cartridge, ITB unit, and OPC drum) (Refer to 6.3.3)
* Disassemble the **front cover** and **top cover** (Refer to 6.4.1)
* Disassemble the **LSU cover**. (Refer to 6.4.14)

1) Remove 2 screws (3*10 silver) and then remove the DEVE open link guide.



2) Separate the DEVE cover by pulling it in the direction of the arrow.

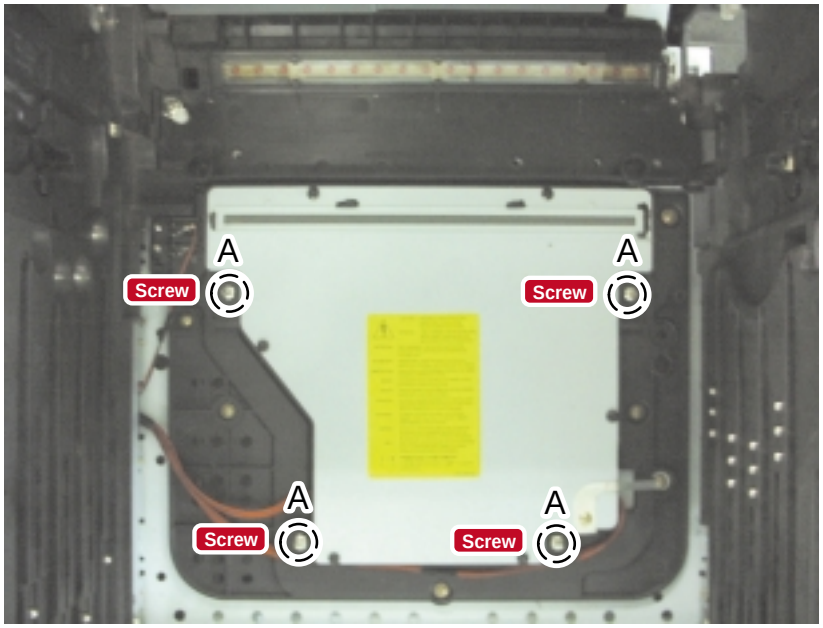


6.4.15 LSU unit

>> Before disassembling it:

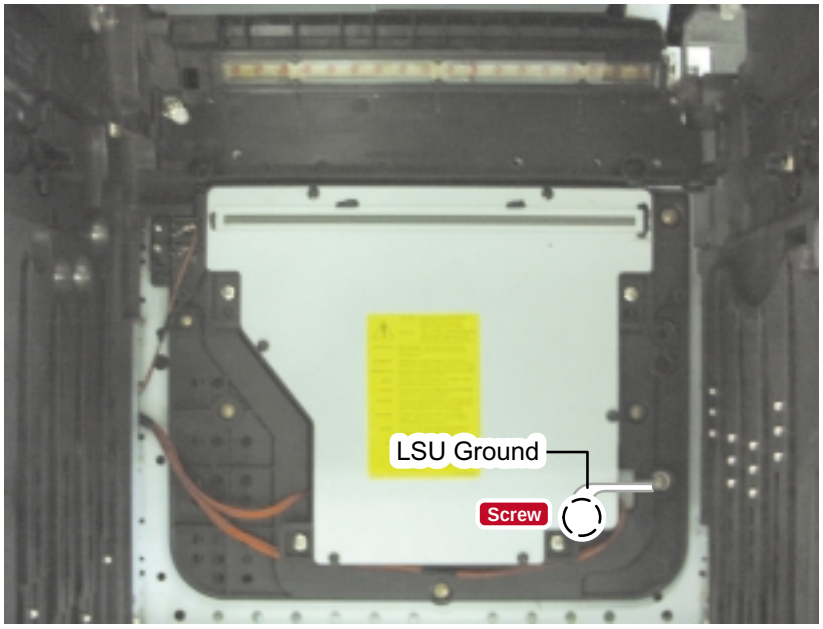
* Remove the consumable parts (Toner cartridge, ITB unit, and OPC drum) (Refer to 6.3.3)
* Disassemble the **Deve cover**. (Refer to 6.4.15)

1) Release 4 screws (4*10 silver). (Use a short length cross-head screwdriver.)

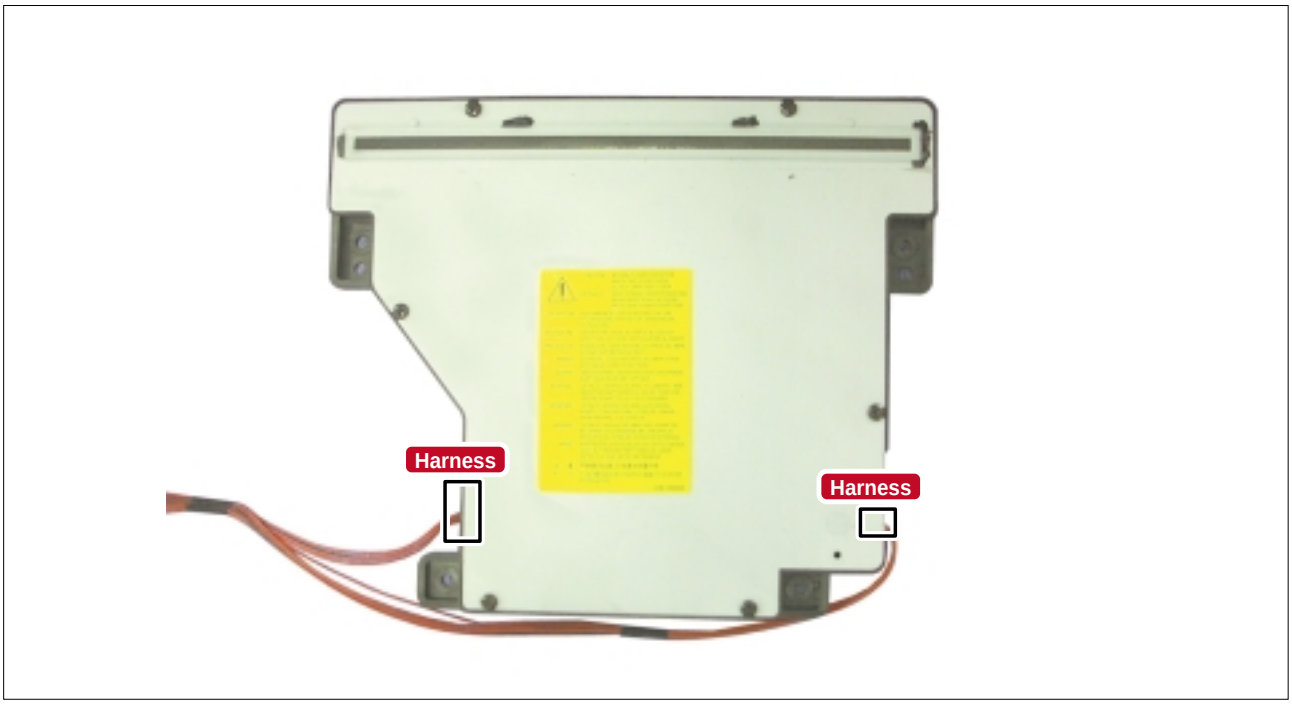


Caution : When removing the 4 screws labeled “A” you will need to use a short screwdriver.

2) Release one screw (3*8 yellow). (Use a short length cross-head screwdriver.)



3) Separate 2 harnesses and remove the LSU unit.

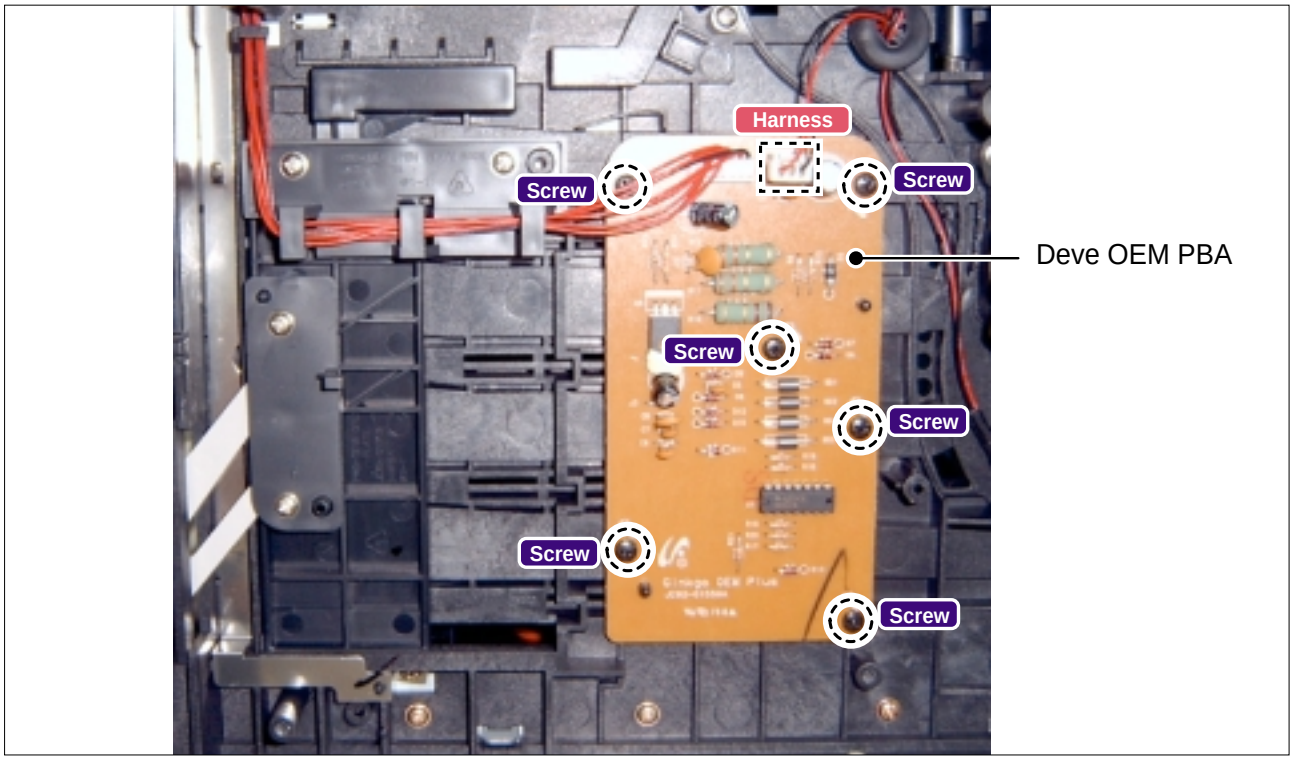


6.4.16 DEVE OEM PBA

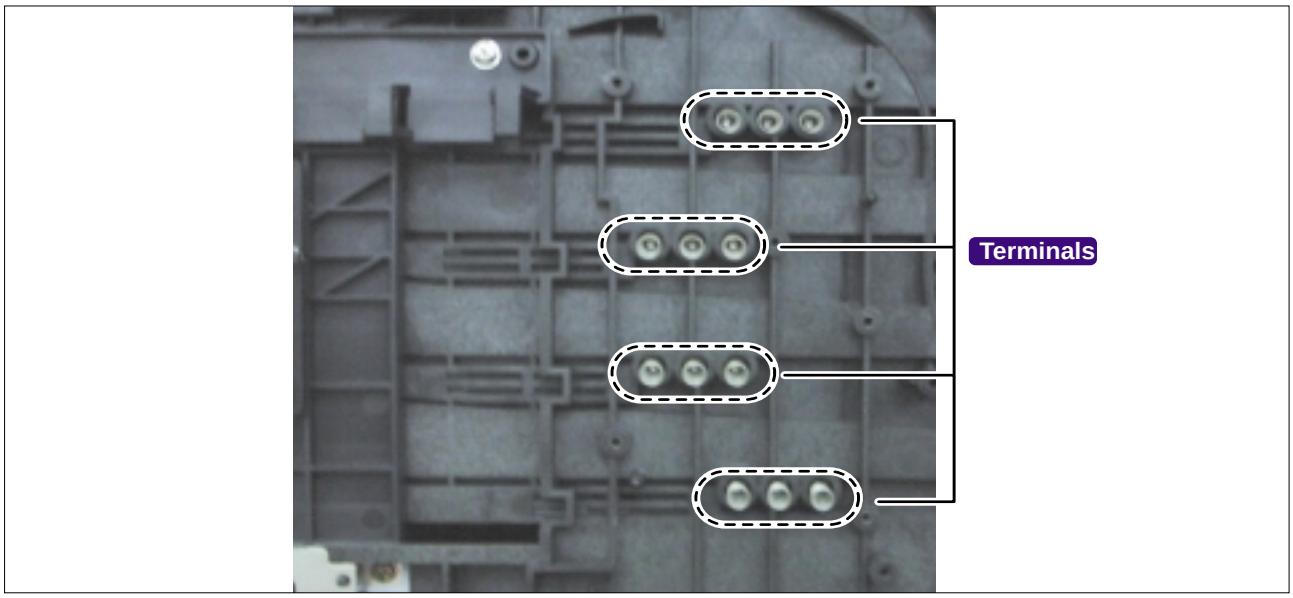
>> Before disassembling it:

* Disassemble the **front cover** and the **top cover**. (Refer to 6.4.1)
* Remove the Rear Cover (Refer to 6.4.3)
* Disassemble the Main PBA Bracket (Refer to 6.4.7)

1) Separate one harness (CN1) from the Main PBA and one harness(CN2) from the DEVE OEM PBA. Remove 6 screws (3*8 black) and then take out the DEVE OEM PBA.



2) Remove 12 terminals.

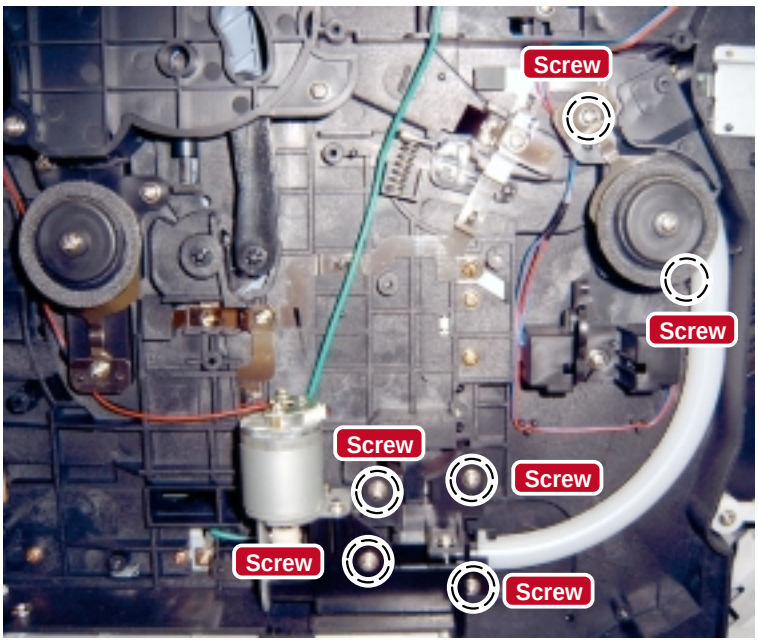


6.4.17 Waste toner ass'y

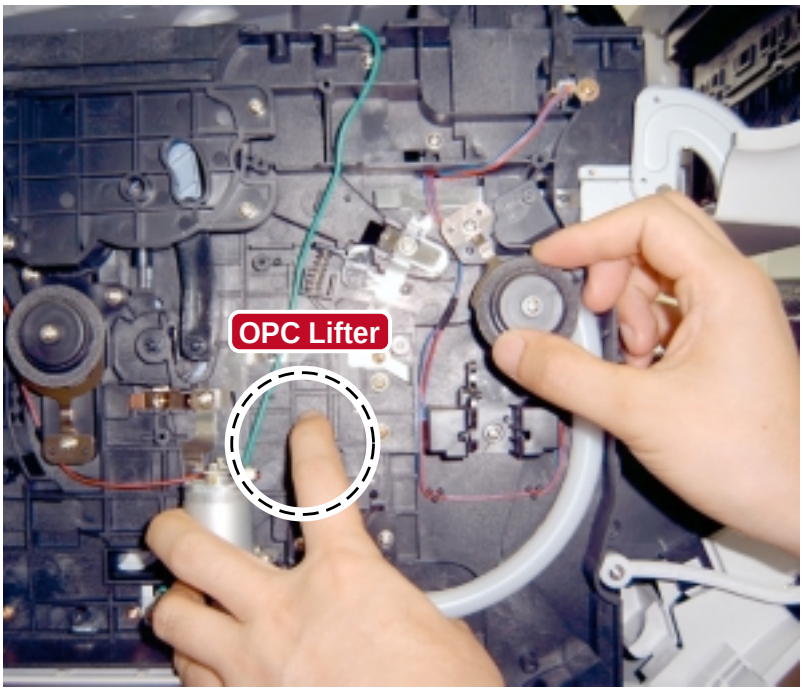
>> Before disassembling it:

* Disassemble a **front cover** and a **top cover**. (Refer to 6.4.1)

1) Release 6 screws (3*10 silver).
   * Upper part: 4 screws * Lower part: 2 screws

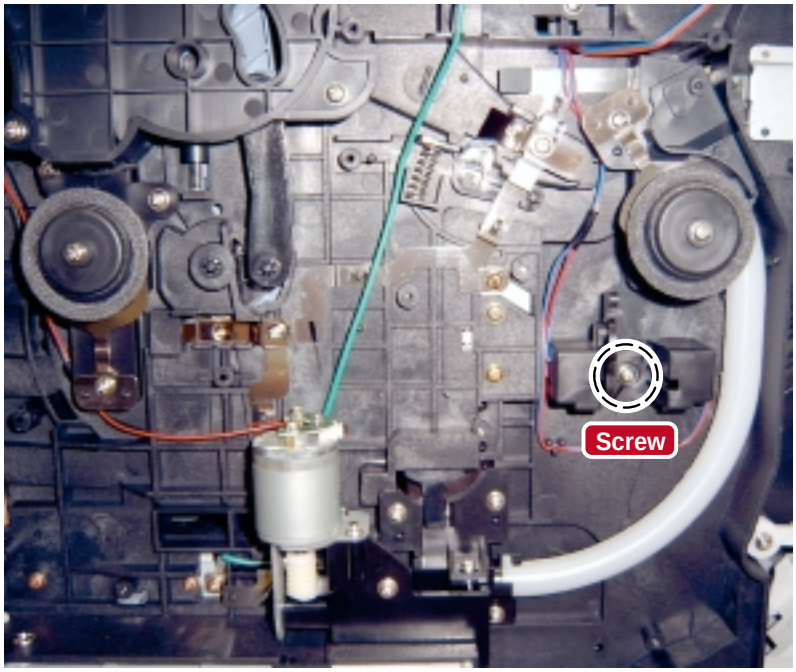


2) Remove the waste toner ass'y by first reaching into the OPC cavity and lightly depressing the waste toner receiver whilst at the same time gently pulling the waste toner motor assy away from the set. Once the ass'y is released refer to the photograph and remove the ass'y.



Caution: * *It is very likely that waste toner will be spilled when removing the waste toner ass'y.*

3) Release one screw (3*10 silver) and then remove the sensor cover.

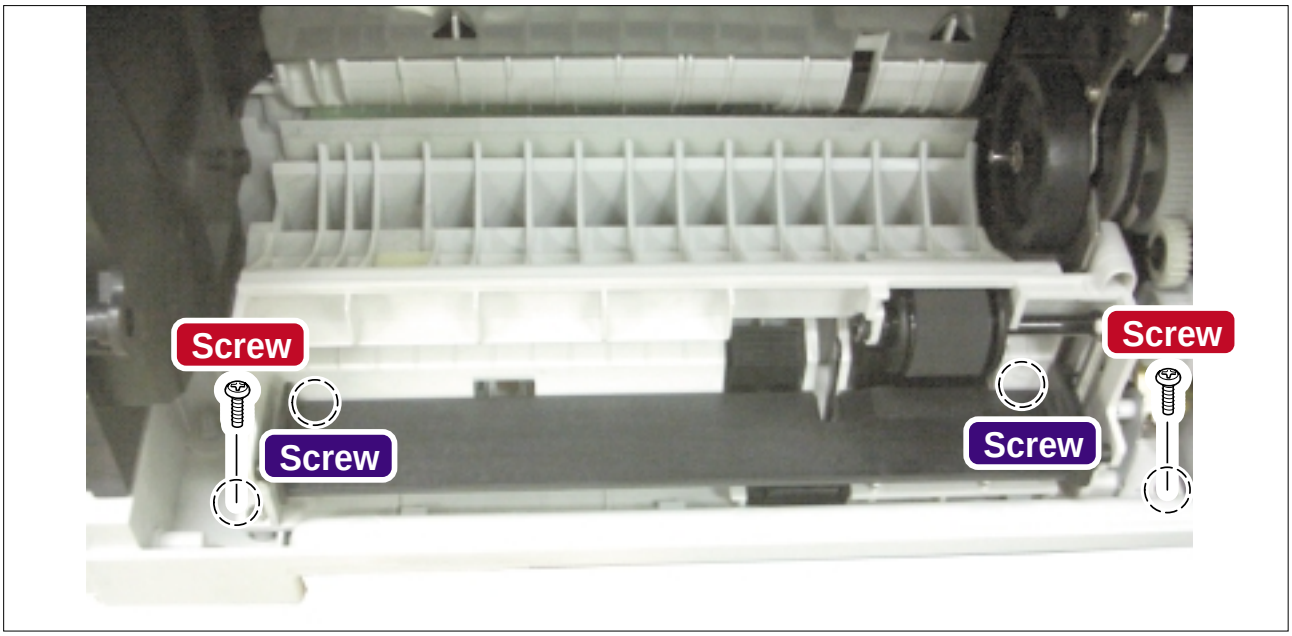


6.4.18 MPT(Multi Purpose Tray)

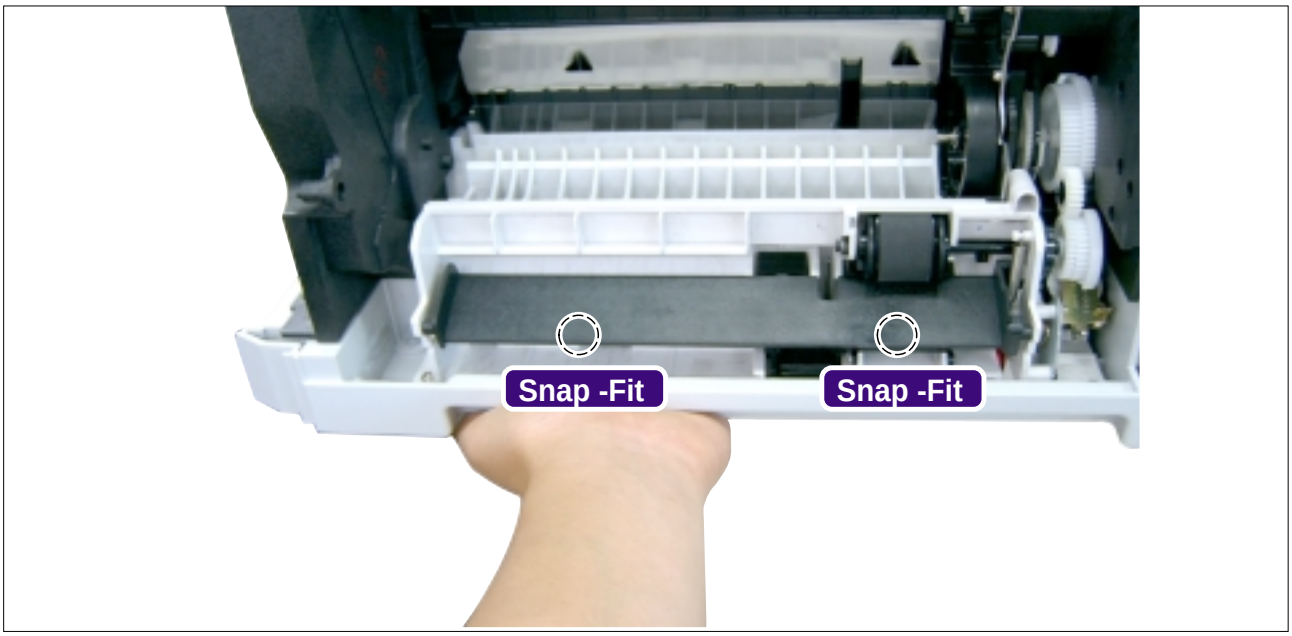
>> Before disassembling it:

* Disassemble **all consumable parts** (Toner cartridge, ITB unit, and OPC drum) (Refer to 6.3.3)
* Disassemble the **front cover** and **top cover** (Refer to 6.4.1)
* Disassemble the **rear cover**. (Refer to 6.4.3)
* Disassemble the **duplex cover**. (Refer to 6.4.4)
* Disassemble the **SMPS & main PBA**. (Refer to 6.4.7)

1) Release 4 screws (3*10 silver)



2) Release the 2 clips located underneath the machine (see photograph). Pull the MP Ass'y upward and remove

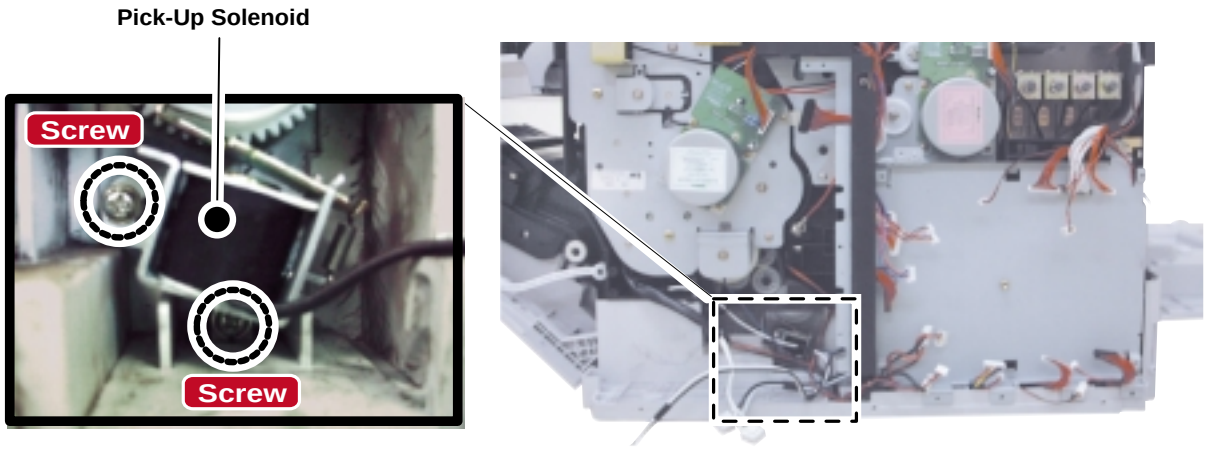


6.4.19 Pick-UpAss'y

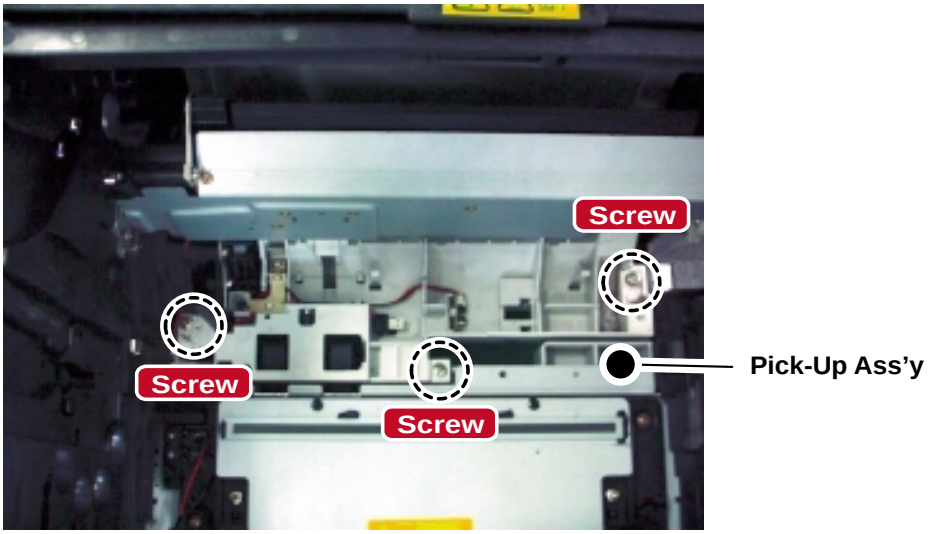
>> Before disassembling it:

*Disassemble all consumable parts (Toner cartridges, ITB unit and OPC drum) (Refer to 6.3.3)
*Disassemble the front cover and top cover (Refer to 6.4.1)
*Disassemble the rear cover. (Refer to 6.4.3)
*Disassemble the duplex cover. (Refer to 6.4.4)
*Disassemble the SMPS & main PBA. (Refer to 6.4.7)
*Disassemble the Erase Lamp. (Refer to 6.4.14)
*Disassemble the Waster Toner Ass'y (Refer to 6.4.18)

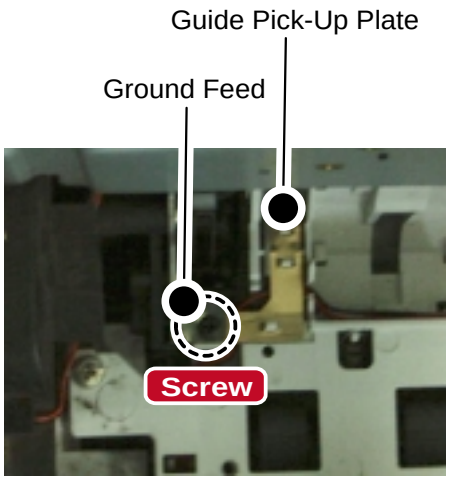
1) Undo 2 screws (3*10 silver) and remove the “Pick-up Solenoid”. Then remove the plastic circlip which retains the Pick-Up Gear and also remove the gear wheel. Release the shaft retaining bearing.



2) Remove the 3 screws (4*10 silver) in the “Pick-up Ass’y”



3) Remove the 3*8 black screw retaining the Guide Pick-Up plate. Using a small flat bladed screwdriver or similar tool force the brass ground plate off the retaining lugs and bend it upward slightly. Release the Eraser Lamp harness and paper Empty Sensor harness, these pass between the main engine frame and base frame and cannot be removed.



4) Remove the “ACTUATOR-EMPY (JC72-00465A)” sensor arm and then take out the “Pick-up Ass’y” by lifting the right hand side and sliding the shaft from the frame.

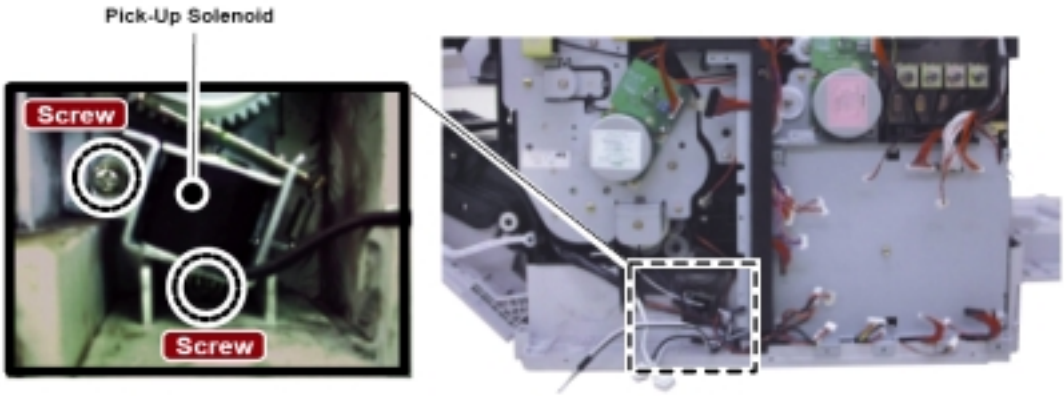
6.4.20 Pick-Up Roller replacement

Note It is not necessary to remove the Pick Up Assy in order to replace the Pick Up Roller

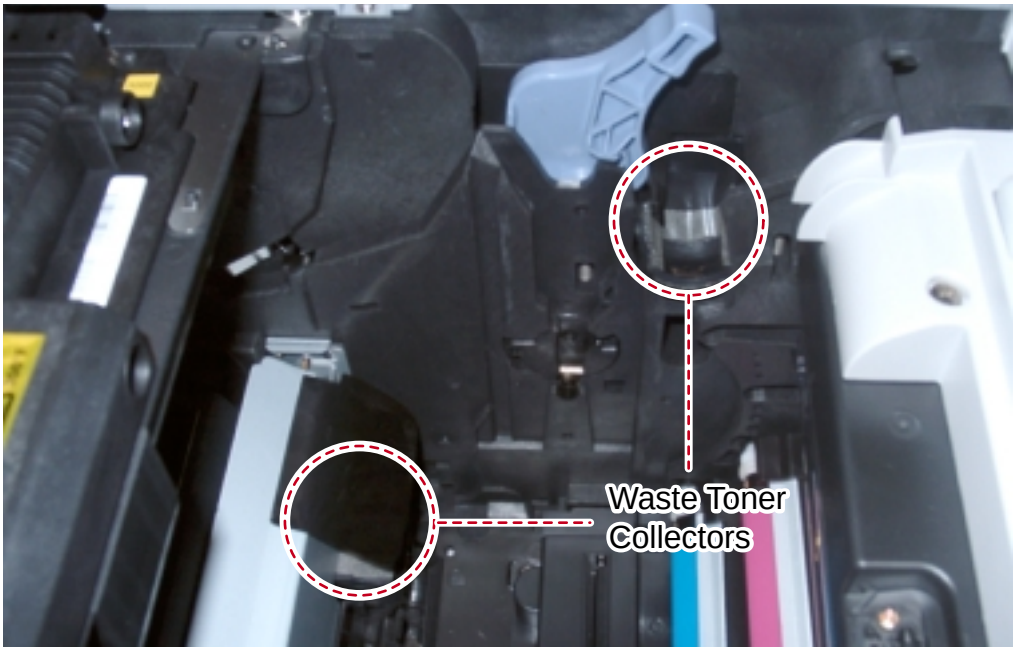
>> Before disassembling it:

*Disassemble all consumable parts (Toner cartridges, ITB unit, Waste Toner Collector and OPC drum) (Refer to 6.3.3)
*Disassemble the rear cover. (Refer to 6.4.3)
*Disassemble the SMPS (Refer to 6.4.7)

1) Undo 2 screws (3*10 silver) and remove the "Pick-up Solenoid". Then remove the plastic circlip which retains the Pick-Up Gear and also remove the gear wheel. Release the shaft retaining bearing and remove it.

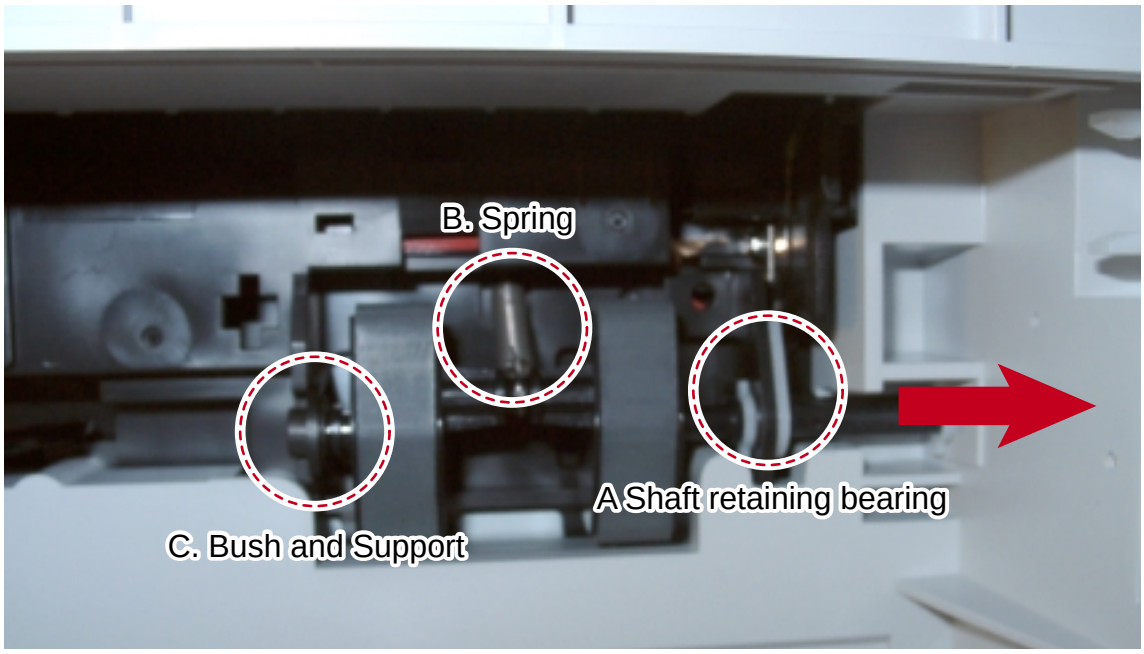


2) Remove the paper cassette. Use a vacume cleaner to remove any waste toner from the Waste Toner collectors inside the OPC space.



3) Turn the set upside down and Release the shaft retaining bearing and slid it away from the roller. Release the Pick Up spring.

4) Push the rollers firmly towards the frame, if necessary rotate the shaft so that the rubbers do not contact the frame. Release the shaft and bush from the end support. Note this support is fragile take great care. Then slide the shaft back away from the frame to remove it.



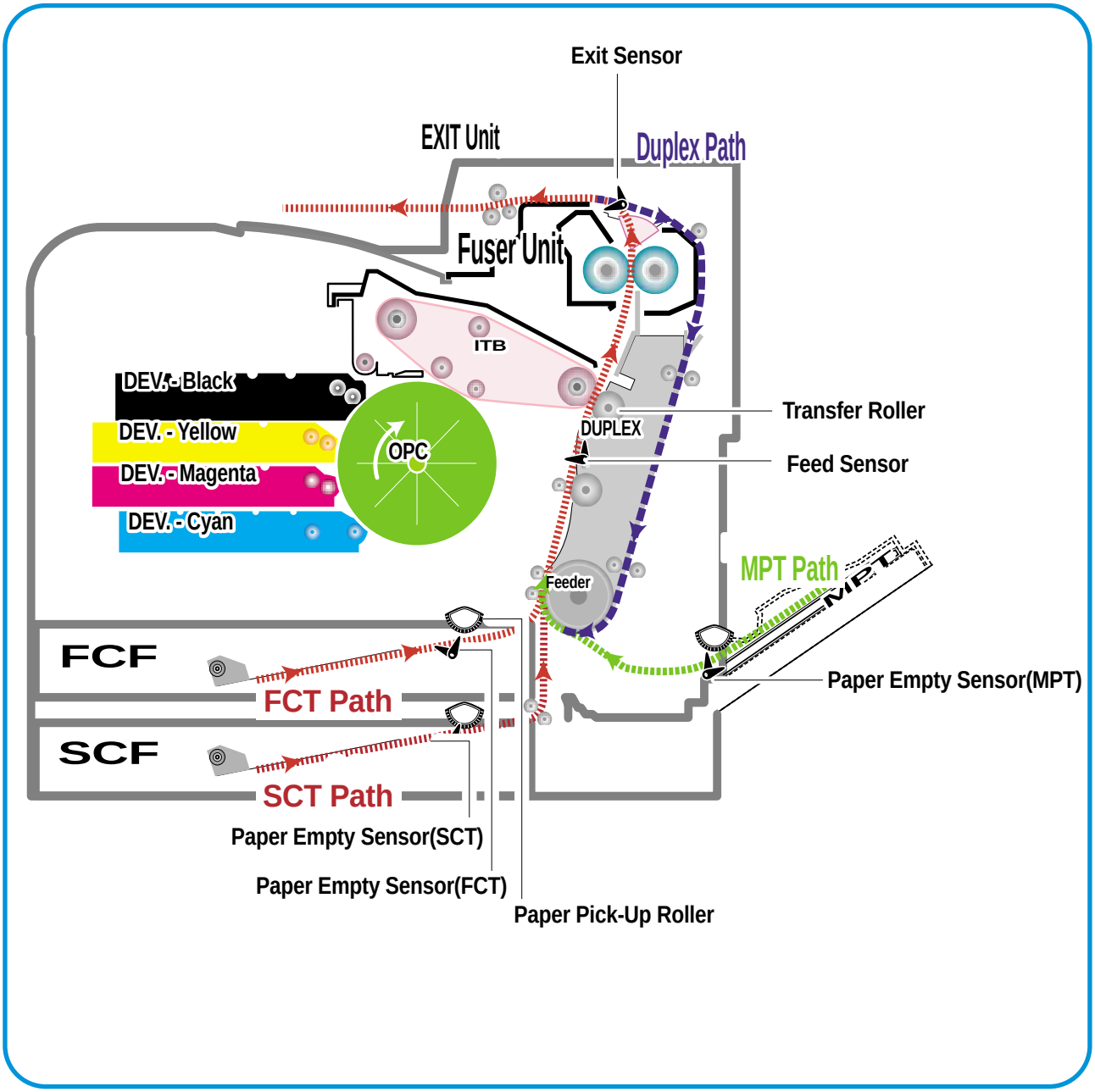
MEMO

7. Alignment and Adjustments

This chapter describes some of the main service procedures including:
Using the EDC mode; Clearing paper jam and test patterns.
Much of this chapter is also included in the user's guide.

7.1. Paper path and Paper jam

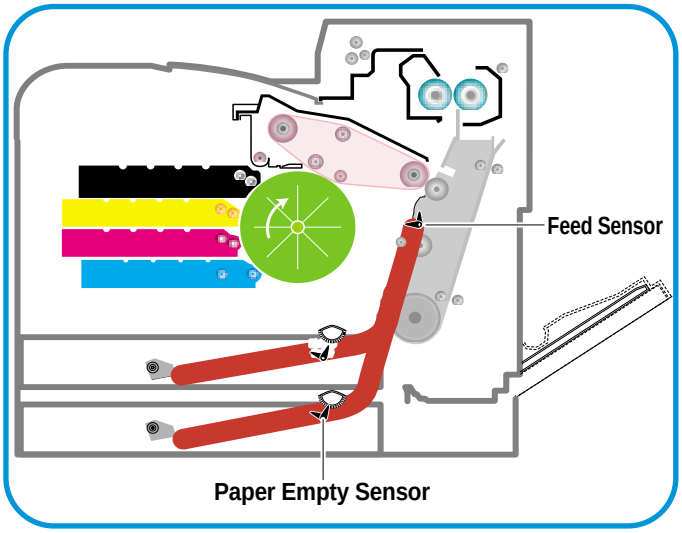
7.1.1 Paper path



7.1.2 Jams

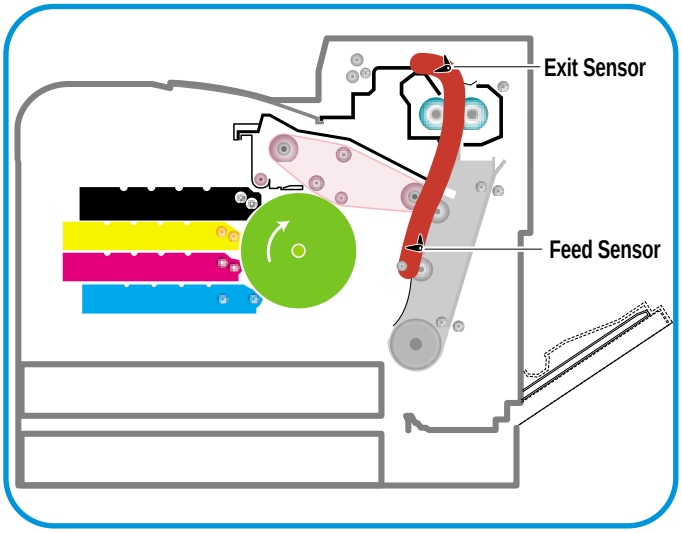
1) Jam0 (Jam in feed area)

* After a page was picked up, it was not fed.
* Paper does not reach the feed sensor in a certain time.
* Feed sensor is faulty and does not detect paper.
  - FCF pickup error: When a paper is not picked up in the 1st cassette.
  - SCF pickup error: When a paper is not picked up in the 2nd cassette.



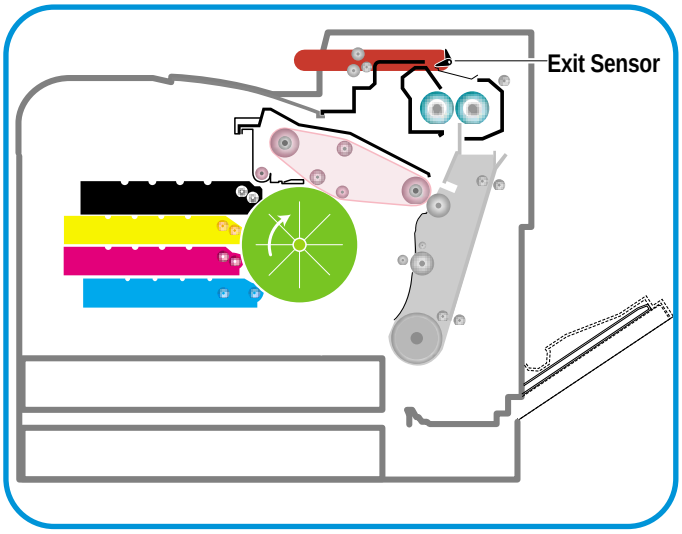
2) Jam1 (Jam inside printer)

* After the leading edge of the paper has reached the feed sensor, the feed sensor doesn't turn off (fails to detect the trailing edge of the paper) in a certain time
* After the leading edge of the paper has passed the feed sensor, it doesn't reach the exit sensor in a certain time.
* Exit senor is faulty and does not detect paper.



3) Jam2 (Jam in exit area)

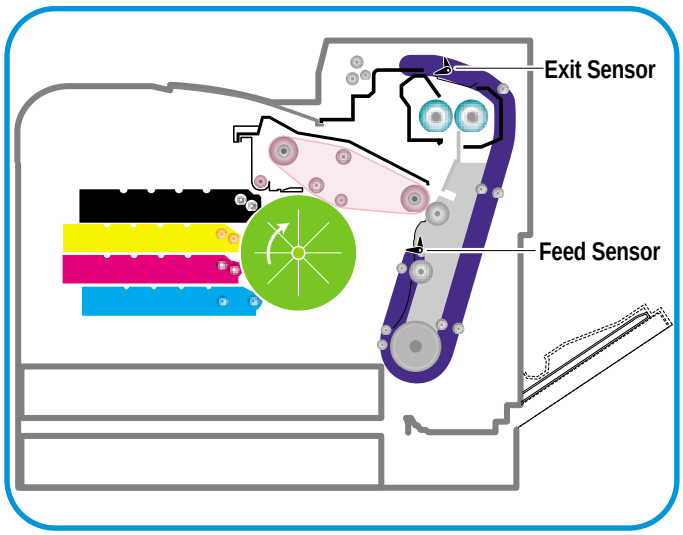
* After the leading edge of the paper has passed, the trailing edge of the paper has not passed the exit sensor within a certain time
* The paper drive motor has been driving for longer than the time needed for the longest paper size and the exit sensor is not off.



4) Jam duplex (Jam in duplex area)

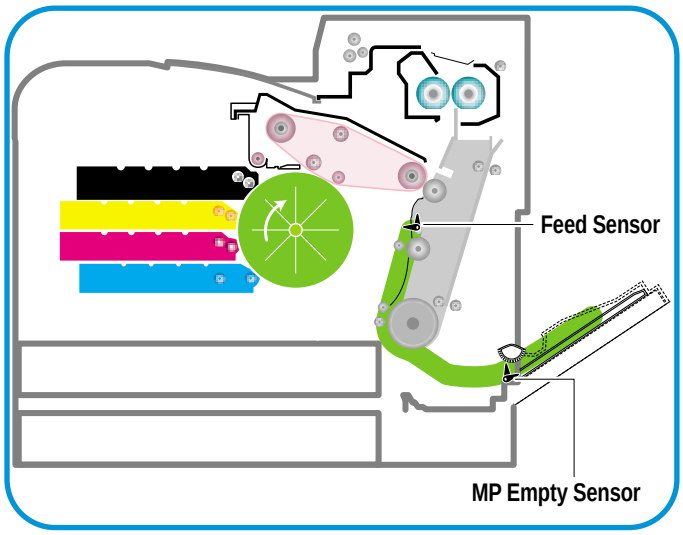
* Jam duplex occurs when printing the reverse side of the paper during duplex printing. After printing the front side the duplex solenoid must operate in order to feed the paper back into the duplex path. If the solenoid fails paper may be stuck in the exit roller and is not fully elected into the exit tray

* If the duplex solenoid operates paper is fed back into the machine. If the leading edge of the paper does not reach the feed sensor in a certain time then Jam Duplex occurs.
  - This can be cause by paper being jammed in the duplex path area.



5) Jam MPF

* Paper could not be picked up from the MPF tray.
* After pickup, a paper has been fed, but it doesn't reach the feed sensor in a certain time.
* Feed sensor is faulty and does not detect paper.



7.2 Jam Removal

When a jam occurs while printing a jam message is displayed on the control panel.

*** Jam0 In Tray 1:**
Paper jam in the main cassette.
*** Jam0 In MP Tray:**
Paper jam in the MP tray
*** Jam0 Tray2:**
Paper jam in the SCT (Second cassette tray)
*** Jam Inside Printer:**
Jam 1, Paper is jammed inside the printer.
*** Jam In Exit Area:**
Jam2, Paper is jammed in the exit area when ejecting paper.
*** Jam In Duplex Path:**
While duplex printing, paper is jammed in the duplex unit.

CAUTION: When removing jammed paper, always pull it firmly and evenly without any sudden jerks. If at all possible, remove the paper as a single sheet. If the paper tears ensures ALL paper fragments are removed. Any fragments left inside the machine will cause it to jam again.

7.2.1 Factors that cause paper to jam

- Too much paper is loaded in the cassette.
- Paper in not loaded correctly in the cassette.
- Duplex cover opened while printing.
- Cassette removed while printing.
- Incorrect thickness of paper used.
- Incorrect size of paper used.
- Cassette paper guides not correctly set (loose or too tight).
- Foreign object or other contamination of internal paper path and paper guide ribs.
- Badly damaged or folded leading or trailing edges of the paper.

7.2.2 Tips for Avoiding Paper Jams

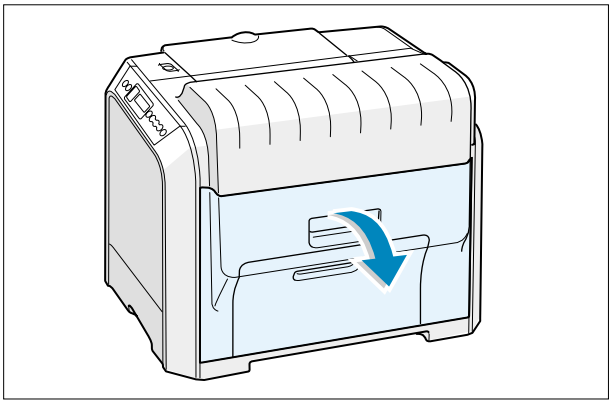
By selecting the correct paper types, most paper jams can be avoided. If a paper jam occurs, follow the steps outlined below:

- Ensure that the adjustable guides are positioned correctly.
- Do not overload the tray. Ensure that the paper is below the paper capacity mark on the right inside the tray.

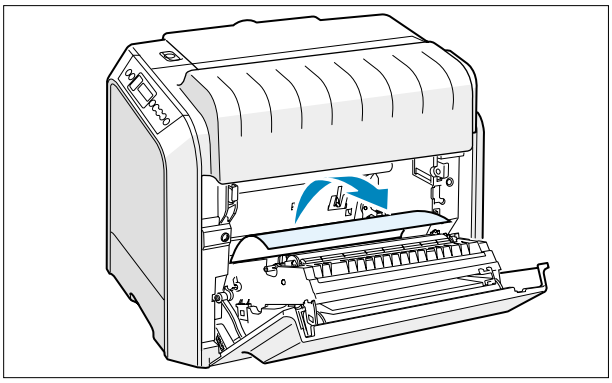
7.2.3 Jam 0 In Tray 1

If paper is jammed in the paper feed area,'Jam0 In Tray1 ' appears on the display.

1. Using the handle open the right cover.



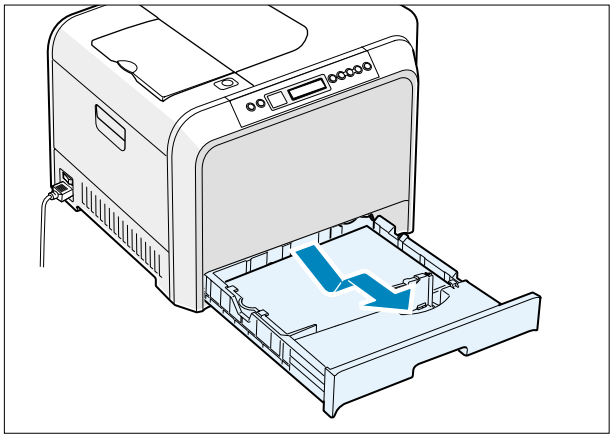
2. Carefully remove the misfed paper in the direction as shown.



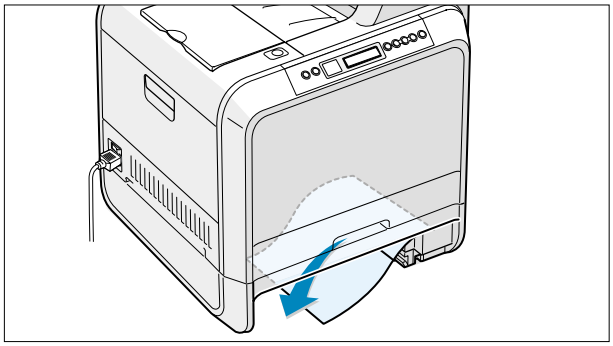
3. Close the right cover .The printer resumes printing.

If there is any resistance, and the paper does not move immediately when you pull, stop pulling and go to step 4.

4. Pull the tray open. After you pull it all the way out lift up the front part of the tray slightly to release the tray from the machine.



5. Remove the jammed paper by gently pulling it straight out.



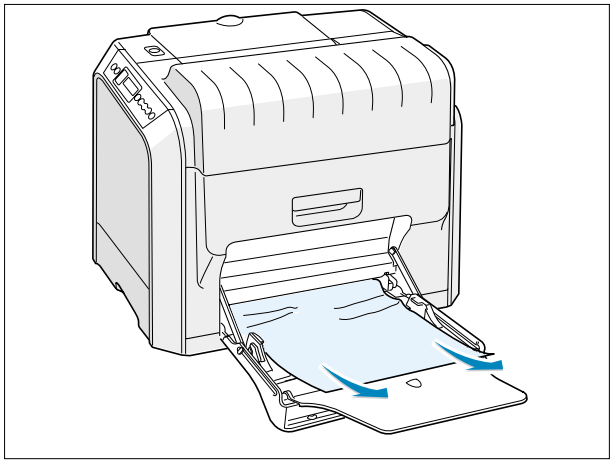
6. To replace the tray lower the rear edge, align it to the slot and slide it into the printer.

7. Close the right cover .The printer resumes printing.

7.2.4 Jam 0 in MP Tray 1

'Jam0 In MP Tray' appears on the display when you are printing using the Multi-purpose Tray and the printer detects either there is no paper or the paper is improperly loaded.

1. If the paper is not feeding properly pull the paper out of the machine..

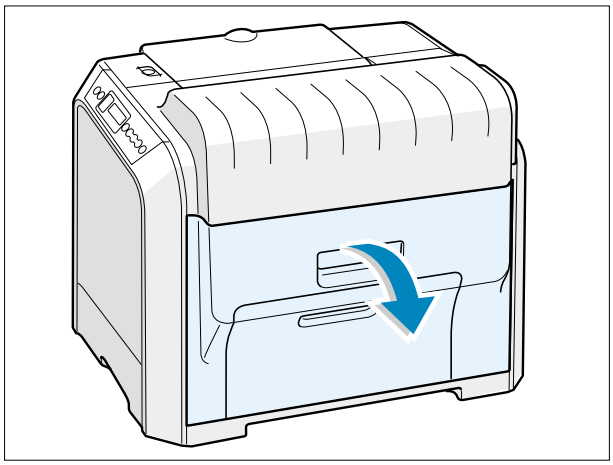


2. To resume printing, open and close the right cover.

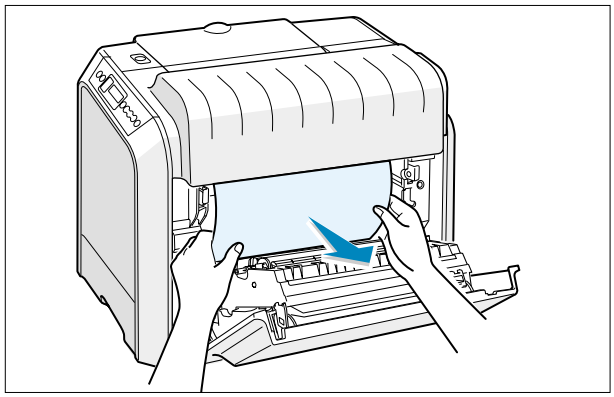
7.2.5 Jam Inside Printer : Jam1

'If paper is jammed inside the printer 'Jam Inside Printer' appears on the display.

1. Using the handle open the right cover.



2. Remove the jammed paper in the direction shown. To avoid the paper tearing pull it out gently and slowly.



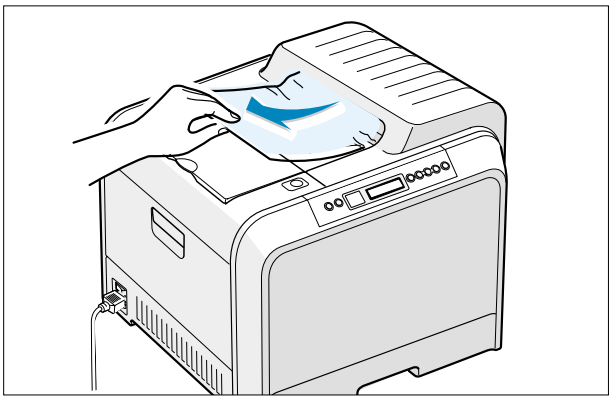
NOTE : If the paper tears make sure that all of the paper fragments are removed from the printer.

3.Close the right cover. The printer resumes printing.

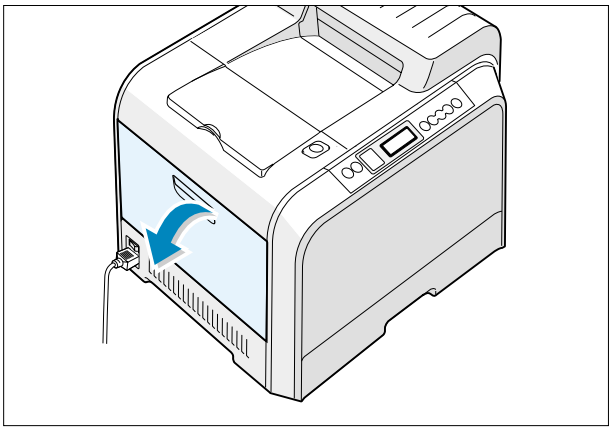
7.2.6 Jam In Exit Area : Jam2

If paper is jammed in the paper exit area 'Jam In Exit Area ' appears on the display.

1. If a long portion of the paper is visible pull it straight out. If not continue to step 2.

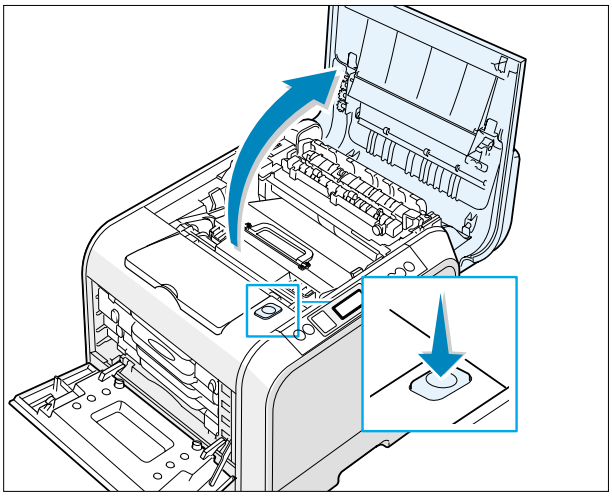


2. Using the handle open the left cover completely.

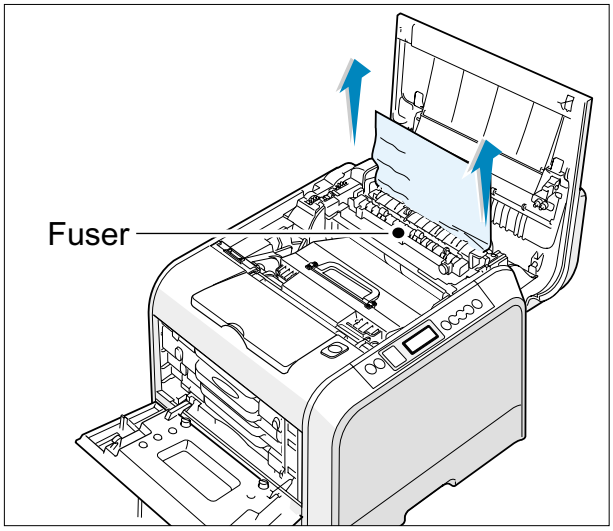


CAUTION : If the left cover is not completely open the top cover release button will not press.

3. Press the top cover release button to unlatch the top cover and open it all the way.

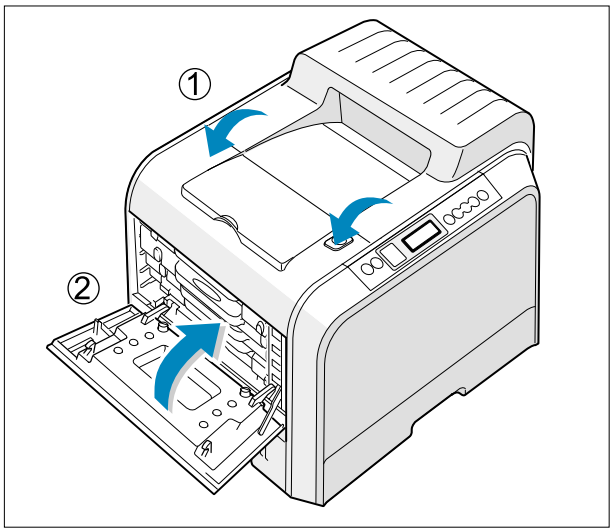


4. Carefully take the jammed paper out of the printer.



CAUTION : Do not touch the fuser it is hot and could cause burns! The fuser's operating temperature is 180 °C (356 °F). Take care when removing paper from the machine.

5. Close the top cover and the left cover firmly



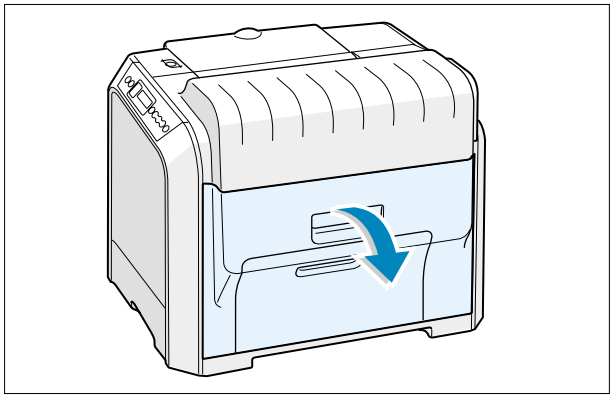
CAUTION : Do not try to close the top cover with the left cover closed. This may cause damage to the machine.

6. Open and close the right cover to resume printing.

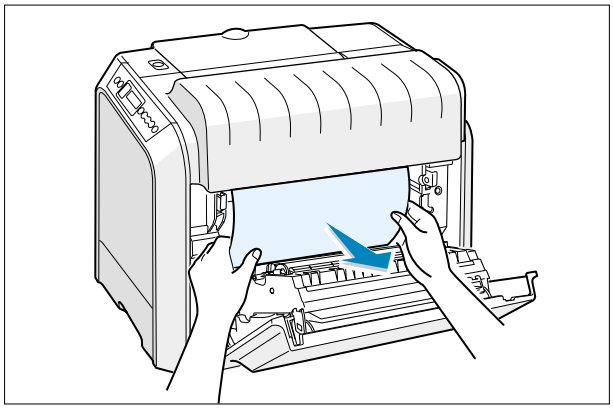
7.2.7 Jam In Duplex Path : Jam Duplex

If paper is jammed in the duplex area 'Jam In Duplex Path' appears on the display.

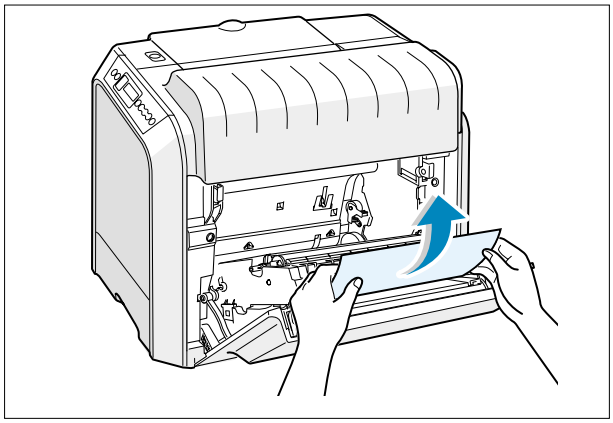
1. Using the handle open the right cover.



2. Locate the jammed paper and then pull it out gently and slowly to avoid the paper tearing. Close the right cover. The printer resumes printing.



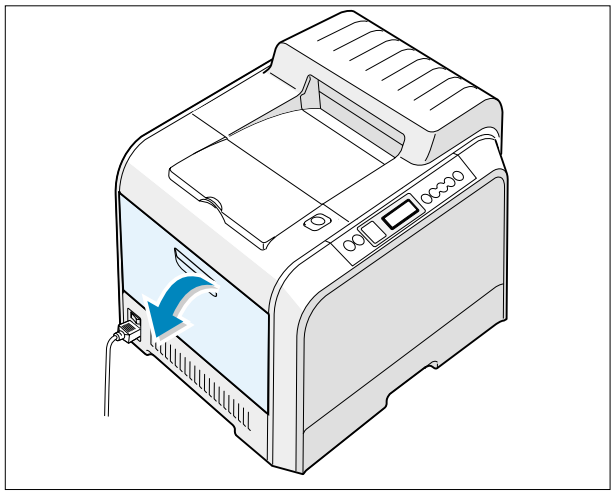
or



Note : If the paper tears make sure that all of the paper fragments are removed from the printer.

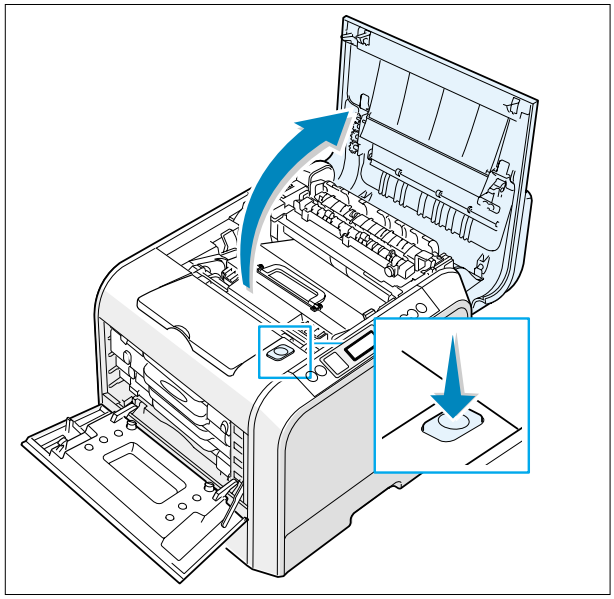
3. If you cannot find the jammed paper or there is any resistance removing the paper go to step 4.

4. Using the handle open the left cover completely.

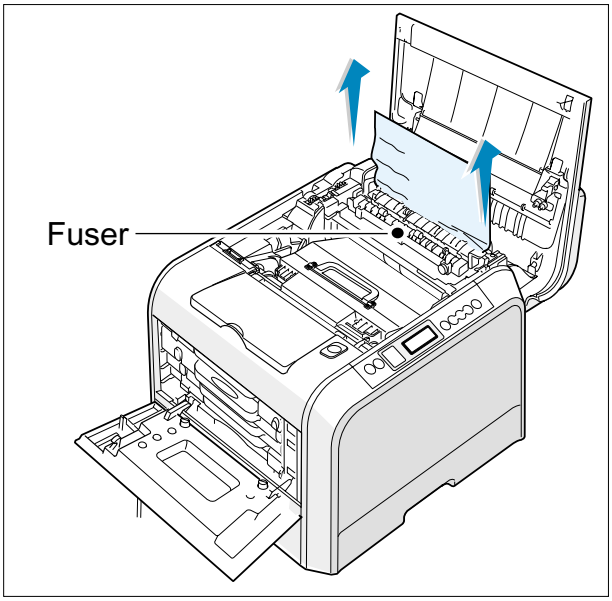


CAUTION : If the left cover is not completely open the top cover release button will not press.

5. Press the top cover release button to unlatch the top cover and open it all the way.

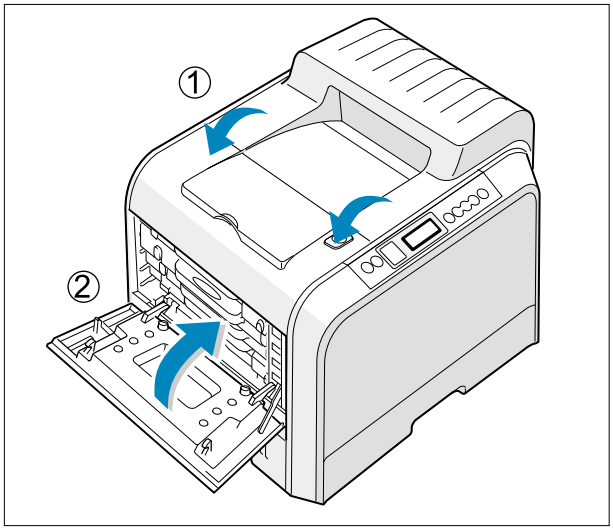


6. Locate the jammed paper and then carefully take it out of the printer.



CAUTION : Do not touch the fuser it is hot and could cause burns! The fuser's operating temperature is 180 °C (356 °F). Take care when removing paper from the machine.

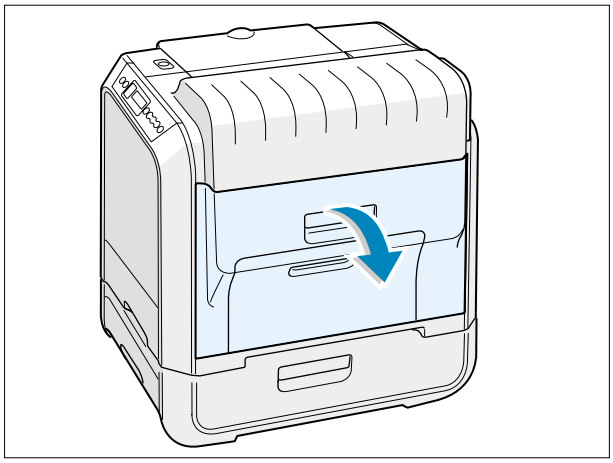
7. Close the top cover and the left cover firmly



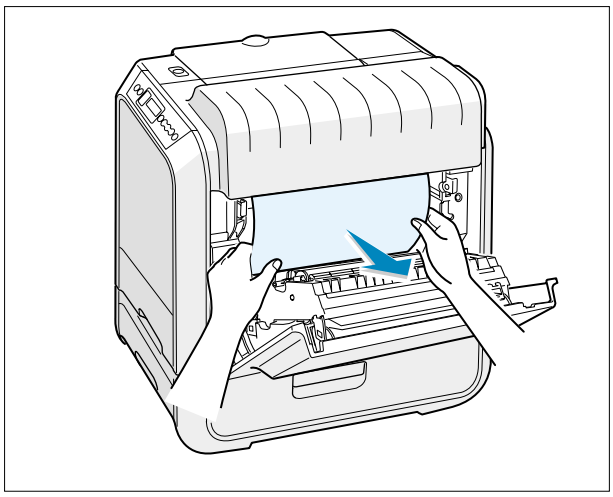
CAUTION : Do not try to close the top cover with the left cover closed. This may cause damage to the machine.

7.2.8 Jam In the Optional Second Tray

1. Using the handle open the right cover.

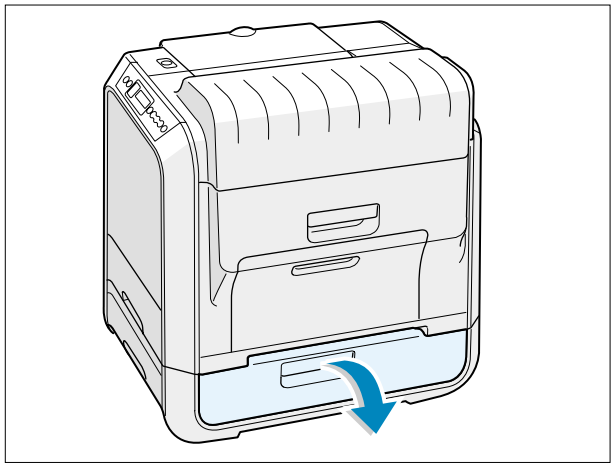


2. Remove the jammed paper in the direction shown. To avoid the paper tearing pull it out gently and slowly.

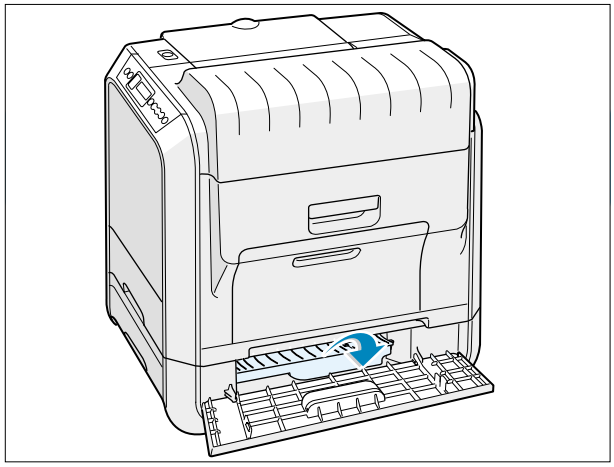


3. Close the right cover. The printer resumes printing.

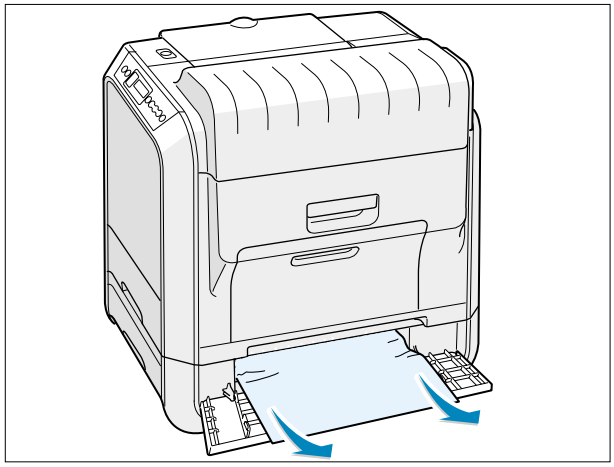
4. If you cannot find the jammed paper in the machine open the Tray2 outer jam cover.



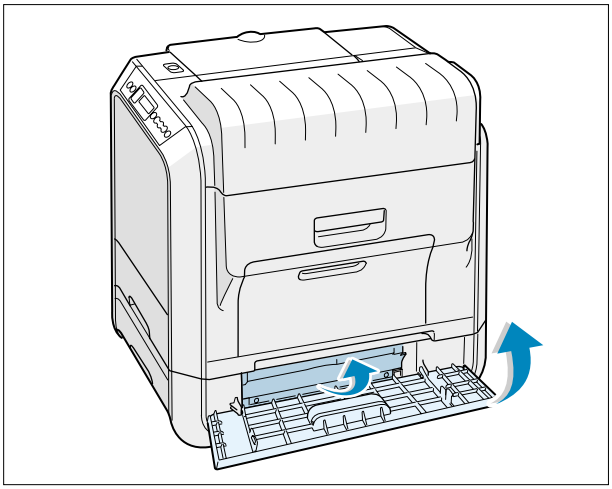
5. Open the inner cover of Tray 2.



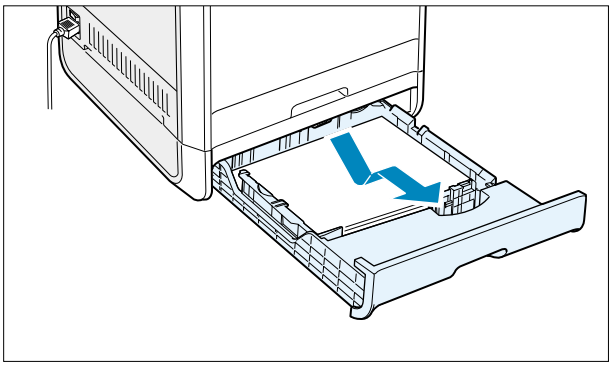
6. Pull the jammed paper out in the direction shown. To avoid the paper tearing pull it out gently and slowly. If there is any resistance, and paper does not move immediately when you pull, stop pulling and continue to step 8.



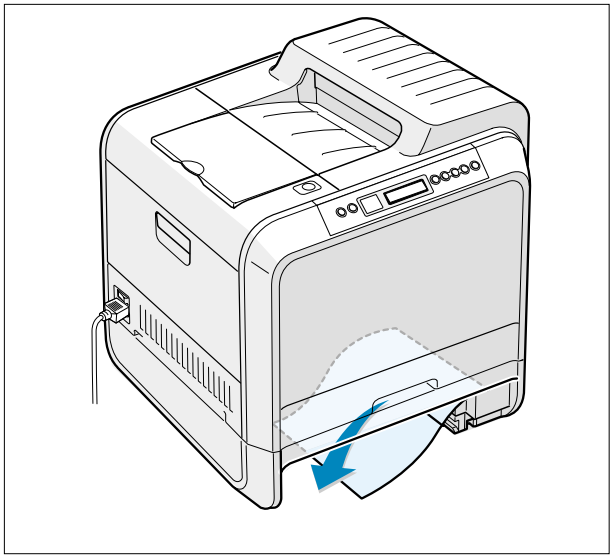
7. Close the two jam covers. Go to step 11.



8.Pull the optional tray, Tray 2, out of the printer.



9. If you see the jammed paper remove the paper from the machine by gently pulling it straight out.



10. Slide the tray back into the printer and close the two jam covers.

11. Open and close the right cover. The printer resumes printing.

7.3 Sample Pattern

This product provides several printable test patterns for maintenance purposes. These patterns can be used to aid the diagnosis of print quality problems.

7.3.1 Printing a Demo Page

Print a demo page to make sure that the printer is operating correctly.

1. Press the **Menu** button ( ) on the control panel until you see “Information ” on the bottom line of the display..
2. Press the **Enter** button ( ) to access the Menu.
3. Press the scroll button (or) until you see “Demo Page ” on the bottom line.
4. Press the **Enter** button ( ) .

A demo page showing the printer ’s features and capabilities prints out.

7.3.2 Printing a Configuration Page

Print a demo page to make sure that the printer is operating correctly.

1. Press the **Menu** button ( ) on the control panel until you see “Information ” on the bottom line of the display..
2. Press the **Enter** button ( ) to access the Menu.
3. Press the scroll button (or) until you see “Configuration ” on the bottom line.
4. Press the **Enter** button ( ) .

A demo page showing the printer ’s features and capabilities prints out.

7.4 Checking the Remaining Toner and Others

7.4.1 Checking the Remaining Toner

You can check the level of toner left in each cartridge.

1. In ready mode press the Menu button (Menu) on the control panel several times until you see 'Setup ' on the bottom line of the display.
2 Press the Enter button (Enter) to access the menu.
3 Press the scroll button (◀ or ▶) until 'Maintenance ' displays on the bottom line.
4 Press the Enter button (Enter)
5 When 'Check Toner ' displays on the bottom line,,press the Enter button (Enter) .
6 Press the scroll button (◀ or ▶) until the color of the toner cartridge you want to check displays on the bottom line.
7 Press the Enter button (Enter) The display shows the percentage of the remaining toner.
8. Press the Upper Level button to return to step 6 and select a different cartridge.
9. To return to the Ready condition press the Upper Level button several times until 'Ready' appears in the display

7.4.2 Checking the Remaining Others

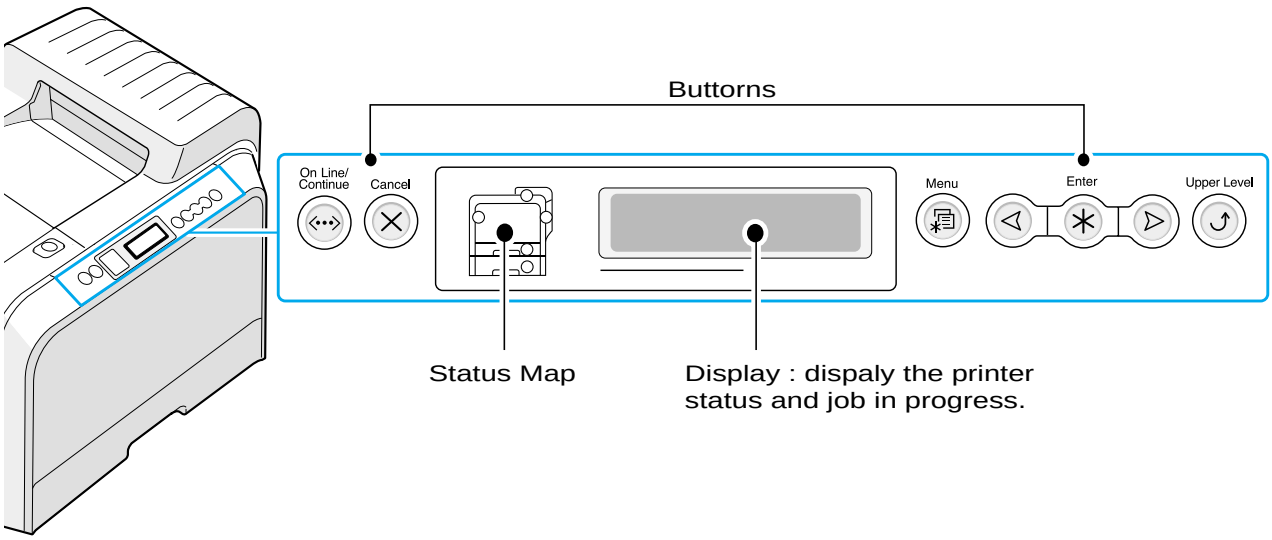
You can check the level of each item.

1. In ready mode press the Menu button (Menu) on the control panel everal times until you see 'Setup ' on the bottom line of the display.
2 Press the Enter button (Enter) to access the menu.
3 Press the scroll button (◀ or ▶) until 'Maintenance ' displays on the bottom line.
4 Press the Enter button (Enter)
5 When 'Check Others ' displays on the bottom line,,press the Enter button (Enter) .
6 Press the scroll button (◀ or ▶) until the item you want to check displays on the bottom line.
7 Press the Enter button (Enter) The display shows the percentage of item.
8. Press the scroll button display either 'Image Count' or 'Reset'
9a. Choose 'Reset' and press enter to reset the counter after replacing a consumable item
or
9b Choose Image count to display the counter.
10. Press the Upper Level button to return to step 7 and select a different choice or press it a second time to return to step 6 and choose a different item.
11. To return to the Ready condition press the Upper Level button several times until 'Ready' appears in the display.

7.5 Understanding the Control Panel

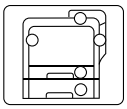
The control panel on the top right side of your printer has a display and seven buttons.

7.5.1 Display



Message	Description
Ready	•The printer is on-line and ready to print. •If you press On Line/Continue ,the printer switches to off-line.
Offline	•The printer is off-line and cannot print. •If you press On Line/Continue ,the printer switches to on-line.
Processing...	•The printer is printing. •If you want to cancel printing,press Cancel .
Sleeping...	•The printer is in Power Save mode, using less power.When a print job is received from the computer or if any button is pressed,the printer switches to on-line. •To deactivate the Power Save mode or change the power-saving time.

7.5.2 Buttons

<table>
<tr><th>Message</th><th colspan="3">Description</th></tr>
<tr><td> 
Status map</td><td colspan="3">When an error occurs,a lamp turns on at the corresponding location on the Status map.An error message appears on the display so that you can locate the error.</td></tr>
<tr><td rowspan="5">On Line/ Continue
  </td><td colspan="3">•Press to switch between on-line and off-line.
•In menu mode,press to return to ready mode.
The color of the On Line/Continue button indicates the status of the printer.</td></tr>
<tr><td rowspan="2">Green</td><td>On</td><td>The printer is on-line and can receive data from the computer.</td></tr>
<tr><td>Blanking</td><td>• When the backlight blinks slowly,the printer is receiving data from the computer.
• When the backlight blinks quickly,the printer is receiving and printing data.</td></tr>
<tr><td rowspan="2">Orange</td><td>On</td><td>The printer stops printing due to a major error.Check the display message.</td></tr>
<tr><td>Blanking</td><td>A minor error has occured and the printer is waiting for the error to be cleared.Check the display message.When the problem is cleared,the printer resumes printing.If you want to ignore this warning,press this button.</td></tr>
<tr><td>Off</td><td colspan="2">•The printer is off-line and cannot print.
•The printer is in Power Save mode. When data is received,it switches to on-line.</td></tr>
<tr><td>Menu
  </td><td colspan="3">• Press to enter menu mode.
• In menu mode,press to scroll through the menus.</td></tr>
<tr><td>Enter
  </td><td colspan="3">In menu mode,press to select the displayed submenu item or confirm the changed setting.The selected item is marked with an *.</td></tr>
<tr><td>  </td><td colspan="3">In menu mode,press to scroll through submenu items or setting options.Pressing • moves you to the next option and pressing • sends you back to the previous option.</td></tr>
<tr><td>Cancel
  </td><td colspan="3">• Press to cancel the current print job.
• In menu mode,press to return to ready mode.</td></tr>
<tr><td>Upper Level
  </td><td colspan="3">In menu mode,press to go back to the upper menu level.</td></tr>
</table>

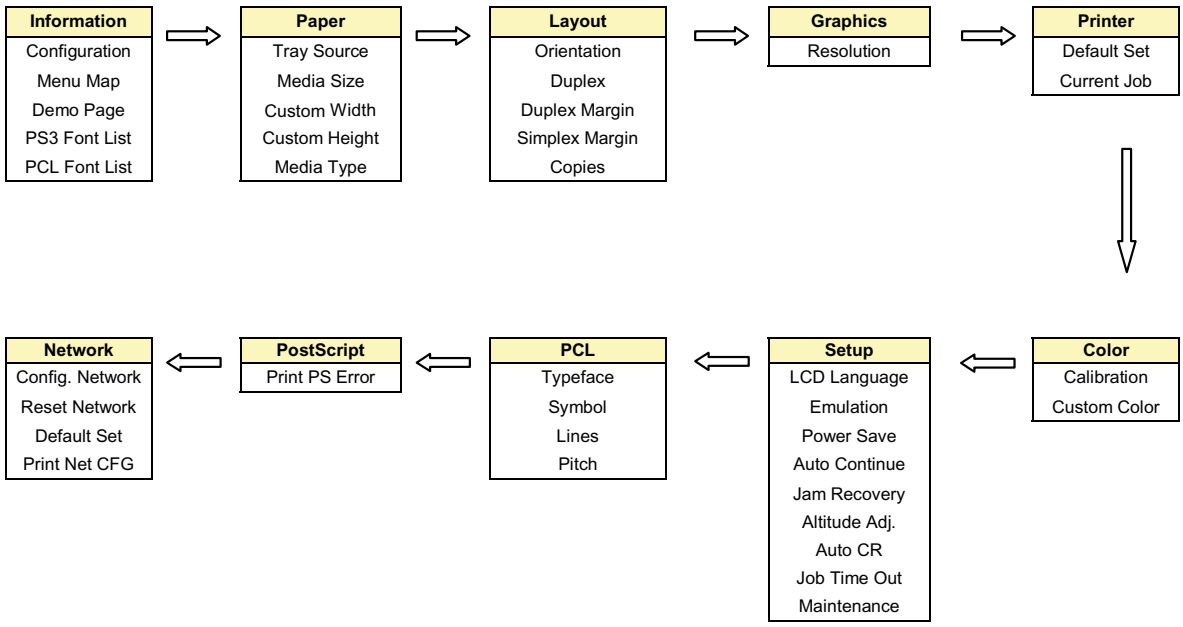
7.5.3 Using Control Panel Menus

A number of menus are available to make it easy for you to change the printer settings.

You can configure your printer from the printer's control panel.You can also use the control panel menus while the printer is in use.

1. In ready mode press the Menu button ( ) until you see the menu you want on the bottom line of the display.
2. Press the Enter button ( ) to access the menu.
3. Press the scroll button (or) until the menu item you want displays on the bottom line.
4. Press the Enter button ( ) to confirm the selected item.
5. If the menu item has submenus, repeat steps 3 and 4.
6. Press the scroll button (or) until the setting option you want displays on the bottom line or enter the required value.
7. Press the Enter button ( ) to save your input or selection.
   - An asterisk (*) appears next to the selection on the display, indicating that it is now the default.
8. To exit the menu, press the Upper Level button ( ) repeatedly, or the Cancel button ( ).
   - After 60 seconds of inactivity (no key has been pressed), the printer automatically returns to ready mode.

NOTE: *Print settings made from the printer driver override the settings on the control panel.*



7.6 Periodic Defective Image

If an image defects appears at regular intervals on the printed-paper, it is due to a faulty or damaged roller. Refer to the table below and check the condition of the appropriate roller.

No	Roller	Defective image	Typical defect
1	OPC Drum	same position in each page	white spot on black image or black spot
2	Charge Roller	43.96 mm	black spot
3	Supply Roller	31.41 mm	light or dark horizontal image band
4	Developing Roller	35.34 mm	horizontal image band
5	ITB(T1)	same position in each page	black spot
6	Transfer Roller(T2)	75.36 mm	ghost
7	Heat Roller	109.9 mm	Black spot and ghost, printing backside pollution

7.7 How to use EDC (Engine Diagnostic Control) Mode

7.7.1 EDC Establishment

EDC Mode is feature that allows the engineer to check the condition of the print engine. It can check the operating condition of the motors, sensors, solenoids and clutches, measure the High Voltage from the HVPS and check the operation of the fuser and LSU.

7.7.1.1 How to enter the EDC Mode

a) Turn on the printer while pressing the "Enter" key. Hold the key until 'Select Test mode' appears in the display.

b) Press the direction key until "<EDC Test>" is displayed.

c) Press the "Enter" key.

d) <Enter Access Key> appears in the display. Press the cancel key twice.

***Note**. There are a number of other test modes. Only EDC Test and Panel Tests should be used by service engineers, all other functions are for factory use only.*

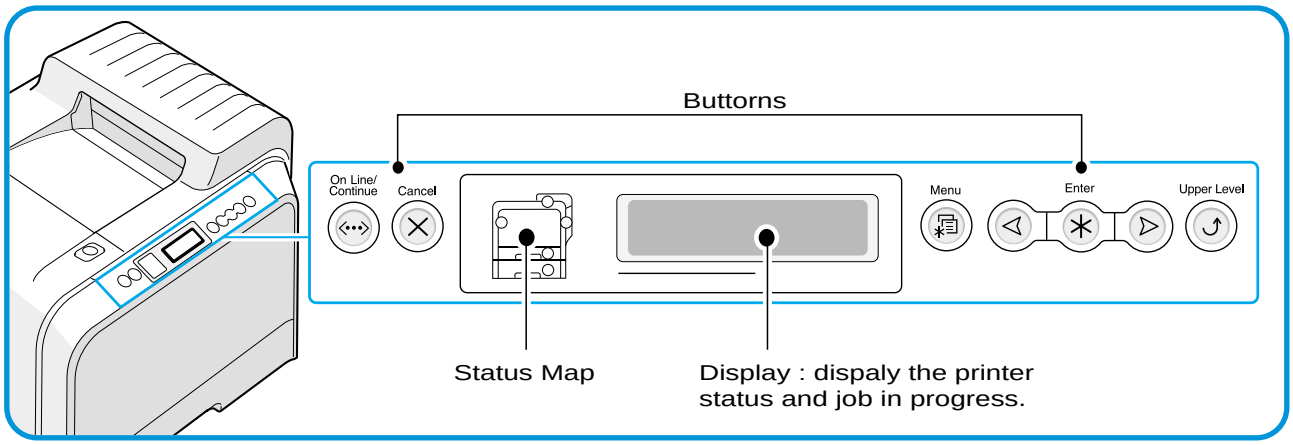
7.7.1.1 Functions of the keys on the Panel and how to use them.

Key	Function	Description
On Line		Not used
Cancel		Not used
Menu	Menu	Display Top Menu of EDC Mode
Left/Right Arrow	Find Menu	Move Menu
Confirm	Run/Select Run	run the Function / Select Menu
Upper Menu	Stop/Move Stop	Stop the selected Function or go to Upper Menu.

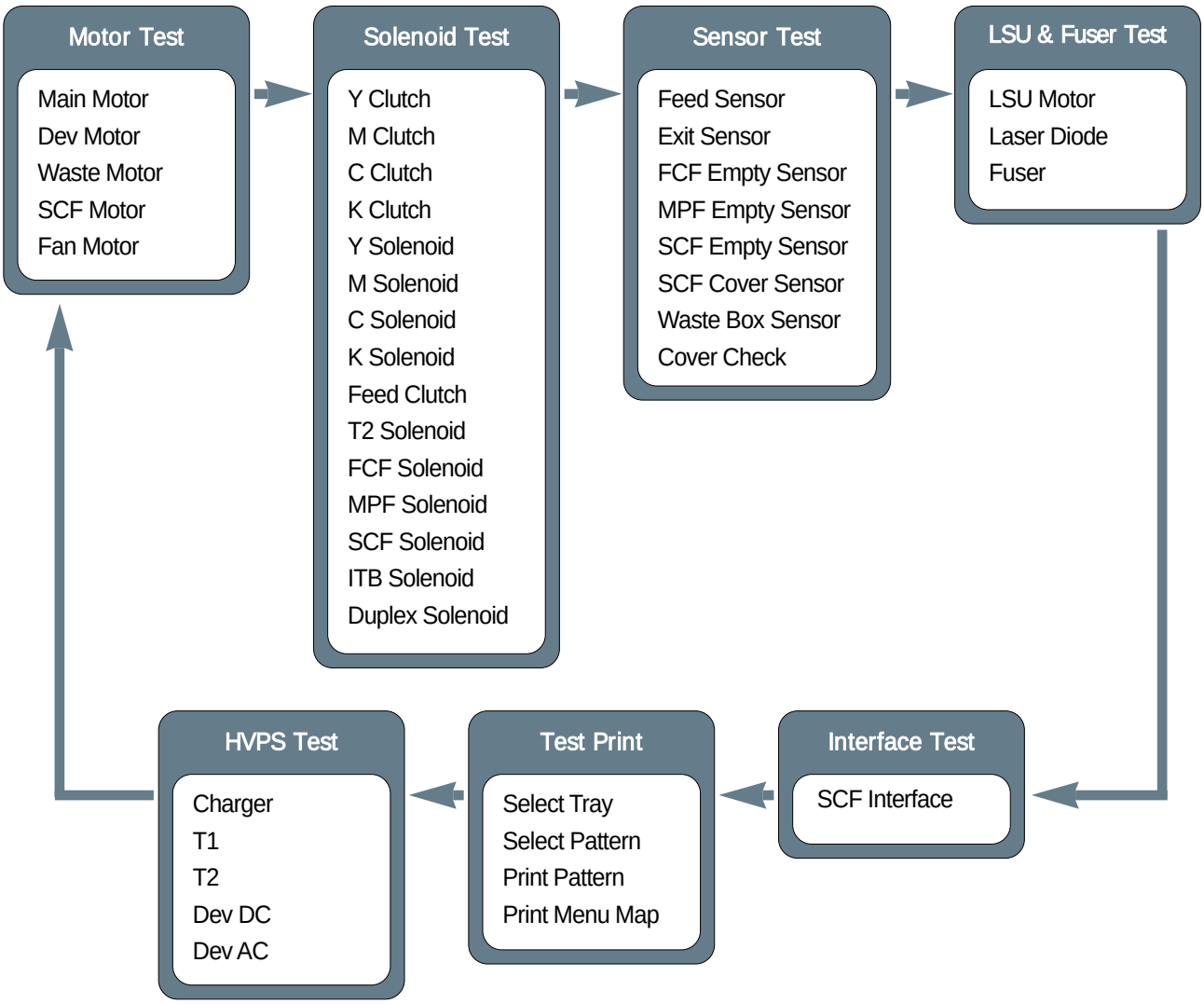
7.7.1.2 LCD Function and Directions

Upper Line : Upper Line messages mainly show the current test menu or sub-menu.
[Main Menu] or [Function] is displayed.

Lower Line : Lower Line messages mainly the current test and status.



7.7.2 EDC Whole Menu



7.7.2.1 Motor Test

This function allows the operation of the various motors to be checked.

<How to operate>

a) Press the "<" or ">" key until "Motor Test" is displayed.
b) Press the "Enter" key to select this function.
c) Press the "<" or ">" key until you see the name of the motor you wish to test.
d) Press the "Enter" key to run the test. The test is stopped by pressing the "Upper Level" key.
e) Pressing the "Upper Level" key when the test is already stopped will return to step 'c' above.
f) Pressing the "Upper Level" key again will return to the EDC main menu.

Item	Description	Remarks
Main Motor	Operates Main Motor	Displays "Succeed" if Motor Lock Signal is Normal, "Failed" otherwise.
Dev Motor	Operates Dev Motor	Displays "Succeed" if Motor Lock Signal is Normal, "Failed" otherwise.
Waste Motor	Operates Waste Motor	Display motor status - "On" or "Off".
SCF Motor	Operates SCF Motor	Display motor status - "On" or "Off".
Fan Motor	Operates Fan Motor	Display motor status - "On" or "Off".

7.7.2.2 Solenoid Test

This function allows the operation of various solenoids and clutches to be checked.

<How to operate>

a) Press the "<" or ">" key until "Solenoid Test" is displayed.
b) Press the "Enter" key to select this function.
c) Press the "<" or ">" key until you see the name of the clutch or solenoid you wish to test.
d) Press the "Enter" key to run the test. The test is stopped by pressing the "Upper Level" key.
e) Pressing the "Upper Level" key when the test is already stopped will return to step 'c' above.
f) Pressing the "Upper Level" key again will return to the EDC main menu.

Item	Description	Remarks
Y Clutch	Operates Yellow Developer Clutch	Displays clutch status - "On" or "Off".
M Clutch	Operates Magenta Developer Clutch	Displays clutch status - "On" or "Off".
C Clutch	Operates Developer Clutch	Displays clutch status - "On" or "Off".
K Clutch	Operates Black Developer Clutch	Displays clutch status - "On" or "Off".
Y Solenoid	Operates Yellow Developer Solenoid	Displays solenoid status - "On" or "Off".
M Solenoid	Operates Magenta Developer Solenoid	Displays solenoid status - "On" or "Off".
C Solenoid	Operates Cyan Developer Solenoid	Displays solenoid status - "On" or "Off".
K Solenoid	Operates Black Developer Solenoid	Displays solenoid status - "On" or "Off".
Feed Clutch	Operates Feed Clutch	Displays clutch status - "On" or "Off".
T2 Solenoid	Operates T2 Clutch Solenoid	Displays solenoid status - "On" or "Off".
FCF Solenoid	Operates FCF pick-up	Displays solenoid status - "On" or "Off".
MPF Solenoid	Operates MPF pick-up	Displays solenoid status - "On" or "Off".
SCF Solenoid	Operates SCF pick-up (Only if SCF is fitted)	Displays solenoid status - "On" or "Off".
ITB Solenoid	Operates ITB cleaning Solenoid	Displays solenoid status - "On" or "Off".
Duplex Solenoid	OperateS Duplex Solenoid	Displays solenoid status - "On" or "Off".

7.7.2.3 Sensor Test

This function allows the operation of various sensors to be checked

<How to operate>

a) Press the "<" or ">" key until "Sensor Test" is displayed.

b) Press the "Enter" key to select this function.

c) Press the "<" or ">" key until you see the name of the sensor you wish to test.

d) Press the "Enter" key to display the sensor status. If the sensor actuator is moved the displayed status will change to reflect the new sensor position..

e) Pressing the "Upper Level" key will return to step 'c' above.

f) Pressing the "Upper Level" key again will return to the EDC main menu.

Item	Description	LCD indication
Feed	Feed Sensor Status	"With Paper" is displayed when Paper is detected, "Without paper" is displayed when paper is not detected.
Exit	Exit Sensor Status	"With Paper" is displayed when Paper is detected, "Without paper" is displayed when paper is not detected.
FCF Empty	FCF Empty Sensor status	"With Paper" is displayed when Paper is detected, "Without paper" is displayed when paper is not detected.
MPF Empty	MPF Empty Sensor Status	"With Paper" is displayed when Paper is detected, "Without paper" is displayed when paper is not detected.
SCF Empty	SCF Empty Sensor Status	"With Paper" is displayed when Paper is detected, "Without paper" is displayed when paper is not detected.
SCF Cover	SCF Cover Sensor Status	"Cover Opened" or "Cover Closed" is displayed.
Waste Box	Waste Toner Sensor Status	"Not Installed" is displayed when either the Waste toner tank is not installed or it is full. "Installed" is displayed when the Waste Toner tank is installed and is not full.
Cover	Left or Right Cover Sensor Status	"Cover Opened" or "Cover Closed" is displayed.

7.7.2.4 LSU & Fuser Test

This function allows the Fuser, LSU Motor and Laser Diode to be tested.

<How to operate>

a) Press the "<" or ">" key until "LSU & Fuser Test" is displayed.
b) Press the "Enter" key to select this function.
c) Press the "<" or ">" key until you see the name of part you wish to test.
d) Press the "Enter" key to run the test. The test is stopped by pressing the "Upper Level" key.
e) Pressing the "Upper Level" key when the test is already stopped will return to step 'c' above.
f) Pressing the "Upper Level" key again will return to the EDC main menu.

Item	Description	Remarks
LSU Motor	Operates LSU Motor	The LSU motor must come into lock within 6 seconds. After 7 secs the status is displayed either: "Succeed" if lock is successful within the time limit "Failed" if lock is not achieved
LD	Operates Laser Diode	
Fuser	Heats the Fuser	Repetitive cycle (10secs) - Lamp on for 500msec then off again.

- The LSU Motor Lock Time is a maximum 15 seconds depending on the environment. It may take over 15 seconds until the <Succeed> or <Failed> message is displayed.
- For safety - after printing a test pattern if you need to return to EDC mode turn the printer off and then re-enter EDC.

7.7.2.5 Interface Test

This function tests communications between the Main PBA controller and the SCF controller.

<How to operate>

a) Press the "<" or ">" key until "Interface Test" is displayed.
b) Press the "Enter" key to select and run this function.
c) "Succeed" or "Failed" is displayed..
d) Pressing the "Upper Level" key again will return to the EDC main menu.

7.7.2.6 Test Print

This function allows you to test the overall function of the print engine. You can select either a 4 * 4 color bar pattern or a solid color pattern. If the solid pattern is selected 4 pages are printed - one for each color. You can also print the EDC Mode Menu Map.

<How to operate>

a) Press the "<" or ">" key until "Test Print" is displayed.

b) Press the "Enter" key to select this function.

c) Press the "<" or ">" key until "Select Tray" is displayed.

d) Press the "Enter" key to select this function.

e) Press the "<" or ">" key until required tray is displayed and then press the "Enter Key"

f) Press the "Upper Level" key.

g) Press the "<" or ">" key until "Select Pattern" is displayed.

h Press the "Enter" key to select this function.

i) Press the "<" or ">" key until required pattern is displayed and then press the "Enter Key"

j) Press the "Upper Level" key.

k) Press the "<" or ">" key until "Print Pattern" is displayed.

l) Press the "Enter" key to print the pattern.

For safety - after printing a test pattern if you need to return to EDC mode turn the printer off and then re-enter EDC Mode by turning power on whilst holding in the "Enter" key.

7.7.2.7 HVPS Test

This function allows the HVPS to be tested

<How to operate>

a) Press the "<" or ">" key until "HVPS Test" is displayed.
b) Press the "Enter" key to select this function.
c) Press the "<" or ">" key until you see the name of the voltage you wish to test.
d) Press the "Enter" key to select the test.
e) Press the "<" or ">" key to select the appropriate Duty Cycle and press "Enter" to start the test
The test is stopped by pressing the "Upper Level" key.
The display shows the acceptable range for this setting (column 4 in the table below)
The mid range (nominal) voltage is shown in column 3 in the table below.
e) Pressing the "Upper Level" key when the test is already stopped will return to step 'c' above.
f) Pressing the "Upper Level" key again will return to the EDC main menu.

Item	Description	Lower Menu & Input Voltage	LCD Indication
Charger	Supply Voltage to the Charger	Duty 50% : -1262V Duty 80% : -2037V	Duty 50% : -1224V ~ -1300V Duty 80% : -1976V ~ -2098V
T1	Supply Voltage to T1	Duty 50% : 1174V Duty 90% : 2080V	Duty 50% : 1139V ~ 1209V Duty 90% : 2018V ~ 2142V
T2	Supply Voltage to T2	Duty 30% : 1800V Duty 80% : 4540V Reverse Bias : -900V	Duty 30% : 1746V ~ 1854V Duty 80% : 4404V ~ 4676 Reverse Bias : -800V ~1200V
Dev DC	Supply DC Voltage to Dev	Duty 45% : -370V	Duty 45% : -359V ~ -381V
Dev AC	Supply AC Voltage to Dev	Duty 35% : -2200V	Duty 35% : -2134V ~ -2266V

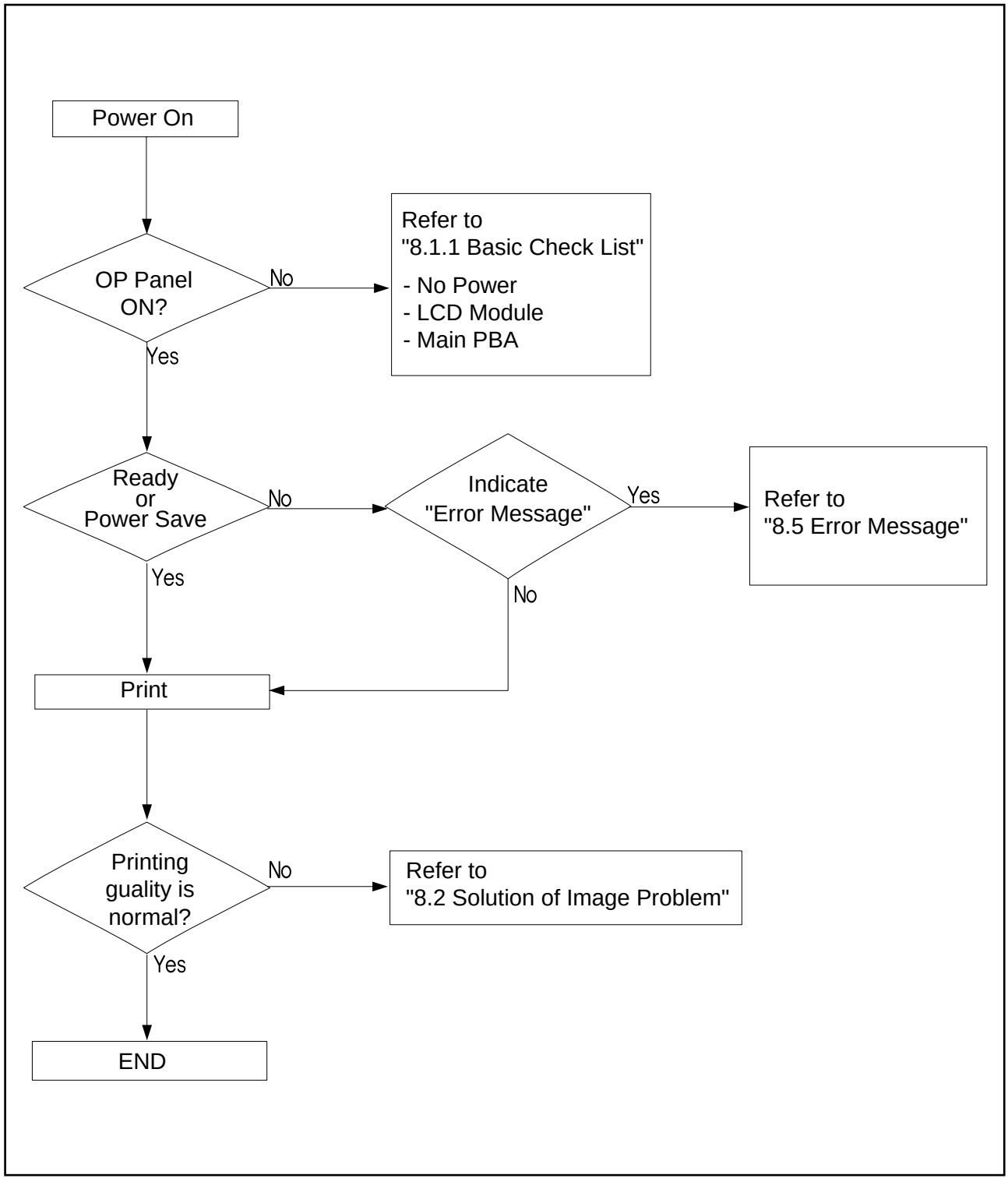
* The allowed tolerance is commonly +/- 3%, this is the value Displayed, in case of "Dev AC", it is the value of Vpp.
* T2 Reverse Bias.(Tolerance : +/-20%)

MEMO

8. Troubleshooting

8.1 Procedure of Checking the Symptoms

Before attempting to repair the printer first obtain a detailed description of the problem from the customer.



8.1.1 Basic Check List

1. Check the Power.

• Does "Warming Up" appear on the display?
--> If not check power cable, switch or SMPS. (see section 8.1.2 below)
--> Does the wall socket work?
• Do the Motors or other components initialize (listen for main motor, fan and LSU sounds)?
--> If not or there are none of the normal startup sounds check cable, switch or SMPS.
--> Does the wall socket work?

2. Check the LCD Panel.

• Is there any display at all?
--> If not check power cable, switch or SMPS. (see section 8.1.2 below)
--> Does the wall socket work?
• Is the display a meaningful message (are there any broken or badly formed characters)?
--> Check the main PBA and cable harness.
• Is the message on the LCD Panel a standard error message?
--> Refer to section 8.4 or 8.5 (Page 8-14 or 8-18).

3. Check the Paper Path

• Is there a Paper Jam?
--> Remove any paper fragments caught in the paper path.
--> Refer to section 8.3 (Page 8-10).
• Paper Jam occurs repeatedly at a specific point in the Paper Path
--> Dismantle the machine and carefully inspect the region where the jam occurs.
(Especially, check if paper fragments are caught in the Fuser

4. Print the Information Page (Configuration).

• Is there a problem?
--> If there is an error see section 2) or 3) above.
• Try printing a test page from a computer.
--> If there is an error check cables and driver installation.

5. Check the Print Quality.

•Is there are a Print Quality Problem?
--> Refer to section 8.2 (Page 8-5).

6. Check consumables (toner etc.).

•Using the keys print the Information Page.
--> Refer to 8.1.4 below and to section 3.5 (Page 3-3) for expected life of various consumable parts, compare this with the figures printed and replace as required

8.1.2 Initial Inspection

1. Check Power part

1. The printer does not work no matter how long you wait.
   A. Is the Power Switch (printer and wall socket) turned on ?
   B. Is the Power Cord connected to the printer correctly ?
   C. Is the Power cord connected to the wall socket correctly ?
   D. Is wall socket working ?
   E. Is the unit rated at the same voltage as the supply ?
2. Does the Fan work when power is turned on?
   A. Check the connectors on the SMPS.
   B. Check the fuses in the SMPS.
   C. Check any error message display on the LCD panel and refer to the troubleshooting section 8.4 or 8.5 (Page 8-14 or 8-18).

2. Check the Installation Environment.

1. Ensure the installation surface is flat, level and free from vibration.
   If necessary move the printer.
2. Ensure that the temperature and humidity of the surroundings are within specification
   If necessary move the printer.
3. Ensure that the printer is position away from any air conditioning or other heating or cooling equipment. Also ensure that is not positioned in a direct draft from any air conditioning, fan or open window.
   If necessary move the printer.
4. Ensure the printer is not positioned in direct sunlight.
   If it is unavoidable use a curtain to shade the printer.
5. Ensure the printer is installed in a clean dust free environment.
   Move the printer to clean area if necessary.
6. Some industrial or cleaning processes give of fumes which can affect the printer.
   Move the printer away from this type of air pollution

3. Check paper type.

1. Use only paper which is of a suitable quality, weight and size?
   See the user guide.

4. Check the overall condition of the printer

1. Is the printer properly maintained ?
   Clean the Paper Transport Passages.
   Any rollers with dirt surfaces should be cleaned or replaced.

8.1.3 Check the length of life of components

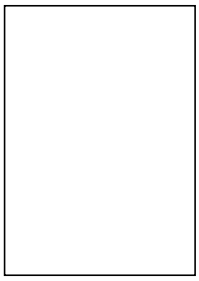
The length of life of consumable components is displayed either by operating time (% of life) or quantity of output. The printer will not work if any of these parts have exceeded there expected life. When a user replaces any of these consumable parts they must reset the appropriate counter using the maintenance menus (see section 7.4, page 7-13).

The printer calculates the working time and quantity of output for each component and saves this information.

1. The Working time for each component (OPC Drum, Toner Cartridge, Image Transfer Belt, Fuser Unit) is measured every 30 seconds when the Transport Motor and Fusing Contact Motor are active.
2. In order to calculate the number of images printed 1 is added to the appropriate counter every 30 seconds. The amount of waste toner is calculated based on the number of pixels in the image.
3. When the user replaces any of the consumable parts and resets the appropriate counter it starts again from 0.

8.2 Solution of Image Problem

- No Image

	Cause	Sequence of Treatment
	Driver Installation Problem.	Try printing a Demo Page. Check that the operating system driver was installed correctly.
	Toner cartridge contacts dirty or not making good contact or empty Toner Cartridge (when printing a single color image)	Check and clean the toner contacts. Re-seat the Toner Cartridge. Replace the Toner cartridge
	ITB cartridge contacts dirty or not making good contact or Faulty ITB unit	Check and clean the ITB contacts. Re-seat the ITB Unit. Replace ITB Unit
	LSU cable harness plugs not fitted properly or faulty LSU.	Check the connectors on the LSU Unit and main PWA are properly inserted. Replace the LSU Unit, cables or MAIN PWA as required
	Toner transfer problem	Check all HV contacts and cables. Replace the HVPS.

- Completely Black Image

	Cause	Sequence of Treatment
	OPC Drum BIAS contacts dirty or not making good contact.	Clean Drum contacts.. Replace the OPC Drum.
	Charge Voltage of the OPC Drum is unstable.	Replace the HVPS Board.

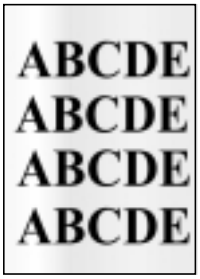
- White Spots / Black Spots / Colored Spots

	Cause	Sequence of Treatment
	Contamination of the internal mechanism of the toner cartridge	Replace the Toner Cartridge.
	OPC Drum surface contaminated or damaged.	Replace the OPC Drum.
	ITB Unit belt is contaminated or damaged.	Replace the ITB Unit Belt.
	Fuser Unit is contaminated.	Clean or replace the Fuser Unit.

- Toner Smudges on the reverse side.

	Cause	Sequence of Treatment
	Paper Path is contaminated.	Open covers fully and clean the Paper Path.
	ITB Unit Belt is contaminated.	Clean or replace the ITB Unit.
	Pressure Roller of Fuser Unit is contaminated.	Clean or replace the Fuser Unit.

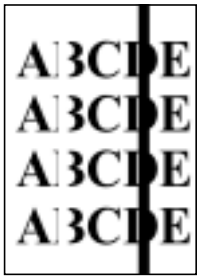
- Foggy back ground

	Cause	Sequence of Treatment
	If the background is contaminated with only one color.	Replace the appropriate Toner Cartridge
	If the background is generally contaminated with all color.	Ensure TDC process is enabled. If problem persists replace the OPC Drum
	If Printing Density is dark(one color only).	Replace the appropriate Toner Cartridge
	If Printing Density is dark(all colors).	Ensure TDC process is enabled. If problem persists replace the OPC Drum

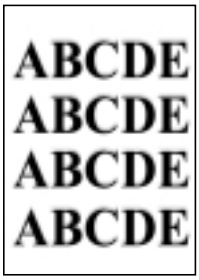
- Low image density

	Cause	Sequence of Treatment
	Poor toner transfer to OPC-one color only	Check and clean Toner contacts Replace the appropriate Toner Cartridge
	Poor toner transfer to OPC- al colors	Check and clean Toner, ITB and OPC unit contacts Ensure TDC process is enabled. If problem persists replace the OPC Drum
	Poor toner transfer to ITB Unit	Check and clean ITB Unit contacts. Re-install or replace the ITB Unit.
	ITB Bias voltage incorrect.	Check and clean ITB Unit contact. Replace the HVPS.

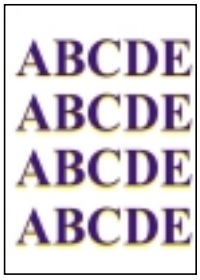
- Black / White / Colored Lines and Bands

	Cause	Sequence of Treatment
	Developing process is contaminated.	Replace the Toner Cartridge. Replace the OPC Drum.
	ITB Unit is damaged or dirty	Replace the ITB Unit.
	Fuser Unit is damaged or dirty	Clean or Replace the Fuser Unit.
	Lens Cover of LSU is damaged or dirty.	Clean the Lens Cover of LSU. Replace the LSU if the glass is damaged

- Offset Image

	Cause	Sequence of Treatment
	Afterimage on the OPC	Replace the OPC Drum.
	Afterimage on the ITB Unit.	Re-install or replace the ITB Unit.
	Toner Cartridge is installed incorrectly.	Re-set the Toner Cartridge.
	Individual color layers offset.	Replace ITB Unit.

- Deterioration of Print Quality for all Colors.

	Cause	Sequence of Treatment
	Problem transferring intermediate images to the ITB .	Check and clean ITB contacts Re-install or replace the ITB Unit.
	Contamination of the Paper Path.	Open the covers, check and clean the Paper Path.
	Problem transferring intermediate image onto paper	Check and clean T2 roller contacts Check T2 Solenoid and cam operation - ensure T2 comes properly into contact when solenoid operates.

- Deterioration of Printing Quality for Specific Color.

	Cause	Sequence of Treatment
	If the of Toner Cartridge is bad	Check or replace the Toner Cartridge.
	If the alignment betweem the OPC and ITB Units is not carrect.	Re-install the OPC and ITB Units.
	Uneven contact between OPC and ITB or between ITB and T2 roller.	Re-install or replace the ITB Unit. Check T2 roller, solenoid and cam operation.

- Uneven Color Density

	Cause	Sequence of Treatment
	Uneven contact between OPC and ITB or between ITB and T2 roller.	Re-install or replace the ITB Unit. Check T2 roller, solenoid and cam operation.
	Uneven color may occur when a toner cartridge has just been installed.	Make test printing a couple of times.

- Whited out area

	Cause	Sequence of Treatment
	Moisture or wet paper.	Ensure paper is stored properly and is not damp. Check paper storage conditions.
	Creases in paper.	1) Creases : Replace the Guide Input. 2) Replace the Fuser Unit. 3) Check OPC, Drum, Toner Cartridge and ITB Unit for contamination and replace as required.
	Fault occurs in Duplex Printing only.	Replace the Duplex Unit.

- Lateral Lines

	Cause	Sequence of Treatment
	Contamination or damage to rollers. Measure distance between lines.	Refer to Table of Circumferences of Rollers. - Mark in same position on every page. Replace ITB Unit Replace OPC Drum - Mark every 75.36 mm Replace T2 roller - Mark every 29.28 mm Replace Toner cartridge
	Laser Unit damaged	Line repeats every 1~2 mm- Replace the LSU Unit.
	Damage or contemination of OPC drum	Random line spacing- Replace the OPC Drum.

- Regularly repeating image defect

	Cause	Sequence of Treatment
	Contamination or damage to rollers. Measure distance between lines.	Refer to Table of Circumferences of Rollers. - Mark in same position on every page. Replace ITB Unit Replace OPC Drum - Mark every 75.36 mm Replace T2 roller - Mark every 29.28 mm Replace Toner cartridge
	Laser Unit damaged	Line repeats every 1~2 mm- Replace the LSU Unit.
	Damage or contemination of OPC drum	Random line spacing- Replace the OPC Drum.

8.3 Paper Feeding Problems and Troubleshooting

8.3.1 Top Margin Error.

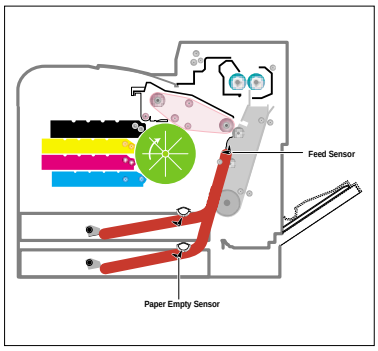
Symptoms : Printing begins at wrong position on the paper.

Check and Cause	Solution
Wrong sensor timing caused by defective feed sensor actuator.	Replace the defective actuator

8.3.2 JAM 0

Symptoms

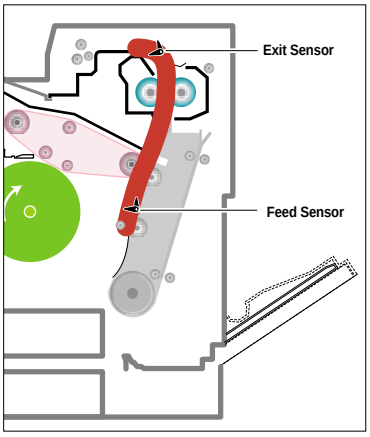
1. Paper has not exited from the cassette.
2. "Jam-0" occurs even though the paper feeds into the printer.



Check and Cause	Solution
1. Check the Feed Solenoid or Pick-Up using EDS Mode.	1. Replace the Solenoid.
2. Check that the Separator Pad has not become loose.	2. Replace the Separator - Pad (inside the Cassette).
3. Check if the surface of the Pick-Up Roller is clean.	3. Clean the surface of the Pick-Up Roller with IPA or water.
4. Check the Feed Sensor is not sticking by using the EDC Mode (When “JAM-0” occurs even though the paper feeds into the printer.)	4. Replace the main PBA or Sensor.

8.3.3 JAM1(JAM inside pinter)

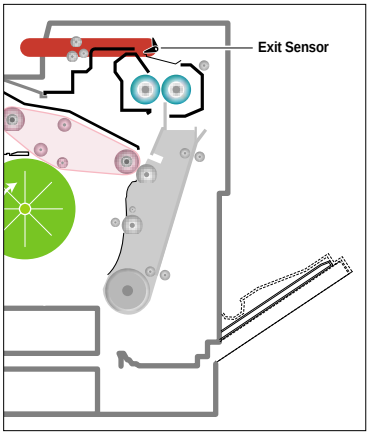
Symptoms Paper is jammed in front of the Fuser or under the T2 Roller.



Check and Cause	Solution
1. If the paper is jammed in front of or inside the Fuser	1. Replace the SMPS.
2. If the paper is caught in the Exit Roller and the Fuser check the Feed Sensor actuator opens and closes freely.	2. - Re-assembly the Feed Actuator and Spring, or clean the Hinge with a lint free cloth. - Replace the Main PBA.

8.3.4 JAM 2 (Jam in Exit Area)

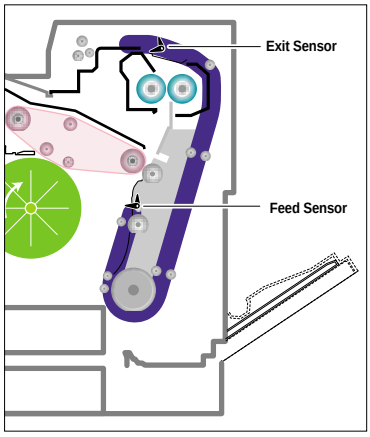
Symptoms
1. Paper is jammed inside the Fuser.
2. Paper is caught in the Exit Sensor Actuator.
3. Paper is caught in the Exit Roller and Fuser, after passing through the Feed Sensor actuator



Check and Cause	Solution
1. The Exit Sensor is defective if Jam 2 occurs after the paper is completely fed out of the printer. This can happen if the actuator sticks open or is slow to close.	1. Check if the Exit Sensor Actuator is broken or damaged. • Check if the Exit Sensor Actuator is deformed (Check that the senor arms are not deformed). • Check for Burrs or rough edges in the Exit Actuator assembly, and check that the sensor arms are free to move. • Check for foreign objects obstructing the Exit actuator.
2. Paper is rolled into the Fuser. • "Accordion" folding occurs repeatedly. • Fuser temperature is too high due to failure or other abnormal conditions. • If the Heat Roller or Pressure Roller is conteminated hard because of Toner.	2. Replace the Fuser.
3. If there are "Accordion" paper folds inside the Fuser.	3. • Replace the Exit Guide. • Check that the Exit unit is assembled properly and full functioning and replace if necessary.
4. If the Exit Sensor is defective. a Jam In Exit Area will occur and printing will stop.	4. Replace the Exit Sensor.

8.3.5 JAM Duplex

Symptoms Indicated "Jam in Duplex Area" on the LCD indicator.



Check and Cause	Solution
1. Paper in the duplex path fails to operate the Feed Sensor.	1. Replace the Feed Sensor or Exit Sensor.
2. Paper in the duplex path fails to reach the Feed Sensor because of jamming in the Duplex Path.	2. Check that there are no foreign objects or fragments of paper in the Duplex Path. If necessary replace the Duplex Unit.

8.3.6 Multi-Feeding

Symptoms Multiple sheets of paper are picked up and fed simultaneously.

Check and Cause	Solution
1. Check the On/Off operation of the pick-up Solenoid using the EDC Mode.	1. Replace the Solenoid, harness or Main PBA.
2. Check the Friction Pad surface for dirt or other contamination.	2. Clean the Pad-Friction using a lint free cloth and water or IPA.
3. Check that the paper is not creased, folded or curved.	3. Use fresh paper.
4. Check that the Paper Guide in the cassette is properly adjusted and that paper is poperly loaded.	4. Adjust the Paper Guide and load paper under the Finger.
5. Influence of Static Electricity.	5. Fan paper before loading to reduce the effects of static electricity.

8.3.7 Paper rolling in the Fuser.

Symptoms Paper is rolled in the Fuser.

Check and Cause	Solution
1. If the Heat Roller is conteminated. (Background, Hot off set)	1. Replace the Fuser.
2. If “Accordion” folding occurs between the Fuser and the Exit Unit repeatedly.	2. Check if the Paper Guide Ribs on the Exit Unit are damaged or contaminated, and check the condition and operation of the Exit Roller.
3. If the Bearing - Fuser or Gear - Fuser is damaged or melted by excessive heat.	3. Check the SMPS and Main PBA if the Bearing Gear is melted.

8.4 Symptoms of Bad Operation and Troubleshooting.

8.4.1 Fuser Error

Symptoms Open Fuser / Over Heat / Low Heat displayed on the LCD Panel.

Check and Cause	Solution
1. Check the continuity of the Thermostat, AC Wire and Heat Lamp.	1. Replace the whole Fuser assembly if the Thermostat is open circuit, otherwise replace heat lamps as required..
2. Check the continuity of the Thermistor and thermistor harness / contacts.	2. Replace broken thermistor or cables as necessary.
3. Test the Heat Lamps and the overheat circuitry.	3. Replace the main PBA id the overheat circuit is faulty..
4. Check the fuser for any evidence of damage due to overheating or melting.	4. Replace the Fuser.

8.4.2 LSU Error

Symptoms Engine LSU Error displayed on the LCD Panel.

Check and Cause	Solution
1. Check the LSU Connector.	1. Replace the LSU.
2. Check the LSU Motor.	2. If the same error recurs replace the main PBA.
3. Check the HSYNC signal.	
4. Check the Deve Cover Micro switch.	

8.4.3 Fuser does not work due to the drive gear melting.

Symptoms The fuser gears melt and the roller drive fails.

Check and Cause	Solution
1. The Fuser makes a noise and fails to operate, rollers may not rotate.	- Replace the Fuser. - Replace the Main PBA. - Replace the SMPS.

8.4.4 Paper Empty

Symptoms LCD shows "Paper Empty" even though paper is ready.

Check and Cause	Solution
1. Check for a broken or distorted paper empty sensor actuator. Check that the actuator is not jammed	1. Replace the Paper Empty Sensor actuator.
2. Check the sensor connectors and cable harness. Ensure that a signal reaches the main PBA	2. Replace the harness.
3. Use the EDC mode to test the actuator.	3. Replace the Sensor Board.

8.4.5 Paper Empty without indication.

Symptoms The machine remains 'Ready; even when the paper cassette is empty.

Check and Cause	Solution
1. Check for a broken or distorted paper empty sensor actuator. Check that the actuator is not jammed.	1. Replace the Paper Empty Sensor actuator.
2. Check the sensor connectors and cable harness. Ensure that a signal reaches the main PBA	2. Replace the harness.
3. Use the EDC mode to test the actuator.	3. Replace the Sensor Board.

8.4.6 Cover Open

Symptoms LCD displays "Cover Open" error even though the cover is closed.

Check and Cause	Solution
1. Check if the Hook Lever inside the Duplex Cover is broken or distorted.	1. Replace the Duplex Cover.
2. Check the Cover Open sensor, connectors and cable harness. Ensure that a signal reaches the main PBA	2. Replace the harness or microswitch as necessary.
3. Use the EDC mode to test the actuator.	3. Replace the Sensor Board.

8.4.7. Can not sense when the Cover is Opened.

Symptoms LCD Indicates "Ready" even when cover is opened.

Check and Cause	Solution
1. Check if the Hook Lever inside the Duplex Cover is broken or distorted.	1. Replace the Duplex Cover.
2. Check the Cover Open sensor, connectors and cable harness. Ensure that a signal reaches the main PBA	2. Replace the harness or microswitch as necessary.
3. Use the EDC mode to test the actuator.	3. Replace the Sensor Board.

8.4.8 Defective Motor

Symptoms Main Motor does not work and paper does not feed when printing. Jam 0 is displayed.

Check and Cause	Solution
1. Check if the Motor Harness or Motor PCB is broken or not.	1. Replace the Motor or Motor Harness.
2. Test the Motor using EDC Mode.	2. Replace the Main PBA.

8.4.9 No Power

Symptoms Power is not supplied to the set, or the LCD display is not on.

Check and Cause	Solution
1. Check the power supply input and DC voltage output from the SMPS. Check the fuses in the SMPS. Check the wall socket.	1. Replace the Power Cable. Replace SMPS fuses. If the fault recurs replace the SMPS.
2. If the SMPS supply is OK, and the LCD still does not work check the display connectors and cable harness	2. Replace cables or LCD Panel Ass'y. Replace the Main PBA.
3. Check if +24VDC or other Power Supplies are shorted out.	3. Replace the components used for +24VDC.

8.4.10 Curved or Distorted Vertical Lines

Symptoms Curved, wavy or distorted vertical lines.

Check and Cause	Solution
1. Use EDC Mode to test the LSU. Check that the +24VCD signal between the main PBA and the LSU is stable	1. Replace the LSU or Main PBA.
2. Check that the LSU clock is stable.	2. Replace the Main PBA.

8.4.11 Low Toner

Symptoms "Ready Replace [Color]" is displayed on the LCD Panel.

Check and Cause	Solution
1. "Low Toner" is displayed when under 500page or less toner remains (in any of the cartridges).	1. Using the keypad check which toner is empty and replace the Toner Cartridge.
2. Check the condition of the contacts on the DEVE PBA.	- Replace the Toner Joint PBA. - Replace the Main PBA.

8.4.12 Replace Toner[CART].

Symptoms LCD displays "Ready Replace [CART]".

Check and Cause	Solution
1. “Ready Replace CART” is displayed when the OPC Image Count value is over 50,000. Image Density may be reduced. It is possible to continue to print one Page at a time by pressing the “On-Line” button when it flashes.	1. Replace the OPC Drum.

8.5 Treatment of Error Message.

ADC Not Confirm Error	The ADC(Analog -to - Digital Conversion) is defective.

1. Turn the printer off, wait 30 secs and then turn it back on.
2. Replace the Main PBA if the same symptoms recur.

Cover Open	One of the covers is not properly closed

1. DEVE Cover or Duplex Cover is open. Check and close it correctly.
2. Check the condition of the Cover Open Sensor assembly.
   --> Replace if it is damaged or nor correctly fitted.

Dev. Motor Error	The developer motor may stop working because of a harness or connector fault, increased torque in any one of the toner cartridges due to rollers sticking, a power supply fault or a fault on the main PBA.

1. Open the Deve Cover and check each Toner Cartridge to ensure that the rollers rotate.
   --> Turn the rollers by hand and check how difficult it is to rotate the rollers.
   --> Replace the toner cartridge if it seems excessively tight.
2. Open the Rear Cover and check if the Deve Motor Harness is assembled correctly.
3. Open the Main PBA Cover and check if the Harness (20pins) connected to the Deve Drive PBA is assembled correctly.
   --> Replace the Harness if there are damaged or badly fitted parts.
4. Check the Power Supply to the Main PBA.
   --> Replace the SMPS if the Power Supply is out of specification.
   --> Replace the Main PBA if the Power Supply from the SMPS is OK.

Engine Fuser Low Heat Error	* The temperature of the Fuser is lower than the Printing temperature. * The Fuser harness is not connected properly.

1. Check that the Fuser is installed correctly.
   --> If not, re-install.
2. Check the AC power to the Fuser (Copper contact.)
   --> If it is no good go to step 3 below otherwise go to step 5.
3. Check the Thermostat on the Fuser.
   --> If it is open circuit replace the Thermostat.
4. Check that the Thermostat on the Fuser is properly positioned and assembled.
   --> Replace the Thermostat if it is not.
5. Check both of the fuser Heat Lamps.
   --> Replace any faulty lamps.
6. Check the Harness connected to the SMPS and Fuser.
   --> Refit the harness or replace if damaged.
7. Replace the Main PBA.
8. Replace the SMPS.

Engine FuserOver Heat Error

The temperature of Fuser is higher than the Printing temperature.

1. Check both of the Thermostats on the Fuser.
   --> If it is open circuit replace the Thermostat.
2. Check that the Thermostat on the Fuser is properly positioned and assembled.
   --> Replace the Thermostat if it is not.
3. Check the Harness connected to the SMPS and Fuser.
   --> Refit the harness or replace if damaged.
4. Check the Fan and the Fan Harness
   --> Refit or replace as required
5. Replace the Main PBA.
6. Replace the SMPS.

Warning : You must replace the complete Fuser Ass'y if Over Heat Error has occurred.
Do not replace only the Thermistor.

Engine LSU Error

There is a fault in the LSU unit.

1. Use EDC mode to test the HSYNC signal and LSU Motor.
2. Check the Harness connected to the Engine Controller and LSU.
   --> Refit the harness or replace it if it is damaged..
3. Replace the LSU.

Main Motor Error

The Main Motor that drives the OPC, ITB and Pick-Up is faulty.

1. Open the Deve Cover and Top Cover and then check the OPC Unit and ITB Unit.
   --> Re-install if they are not correctly fitted or are damaged.
2. Open the Rear Cover and then check the Main Motor Harness.
   --> Refit the harness or replace it if it is damaged.
3. Check if the Power Supply from the SMPS to the Main PBA.
   --> Replace the SMPS if the voltages are outside specification.
4) Check if the No. 7 of CN27 on the Main PBA is near 0V while Main Motor is powered on under the Mode EDC.
   --> Replace the Main PBA if the voltage is near 5V
5) Check if the Motor Clock is generated at the No. 9 of CN27 on the Main PBA while Main Motor is powered on under the Mode EDC.
   --> Replace the Main PBA if isn't generated.

Waste Motor Error

This error is caused by open circuit of Waste Motor Harness or the motor stalling due to increased Waste Motor torque during operation.

1. Open the Front Cover and then check if the Waste Toner Tank is full or the waste inlets are blocked with the Waste Toner.
   --> Replace the Waste Toner Tank and unblock waste inlet feeds.
2. Open the Top Cover and then remove the ITB Unit and OPC Unit and check if the OPC waste toner outlet blocked.
3. Remove the Front Cover and then check the Waste Motor Harness.
   --> Refit or replace the harness if it is damaged.
4. Remove the HVPS Cover and then check that the HVPS OEM Harness is correctly fitted.
   --> Refit or replace the harness if it is damaged.
5. Measure the Voltage on CN2 Pin1 and Pin3 of OEM PBA. (Normal : Over +10VDC)
   --> replace the OEM PBA if there is no output.

Image Transfer Error

This is caused by a badly fitted or unlocked ITB unit or a faulty ITB Home Sensor.

1. Open Top Cover and then check that the ITB unit properly fitted and locked in position.
   --> Remove, replace and re-lock the ITB unit.
   --> If the same fault recurs regularly replace the ITB unit.
2. Check the condition of the ITB Harness (especially if replacing the ITB does not resolve the problem).
   --> Refit or replace the harness if it is damaged.
3. Check the signal on Pin 1 of CN10 on the Main PBA.
   --> Replace the Main PBA if the signal is Active Low.

Invalid Drum Cartridge

Can not communicate with the OPC Unit.

*This is caused by a wrong value of OEM Resistor in the OPC Unit.
*It is also caused by miss-reading the value of the OEM Resistor because of contamination of the contact points.

1. Check that an original Samsung Drum Cartridge is fitted.
   --> If not replace the OPC drum.
2. Clean the OPC unit contact points.
3. Check the Harness connected between the Main PBA and Toner OPC Unit.
   --> Refit or replace the harness if it is damaged.
4. Check the “R150” on the Engine Controller.
   --> Replace the Engine Controller.

Invalid Image Transfer

Can not communicate with ITB Unit.

*This may be caused by a wrong value of OEM Resistor in the OPC Unit.

1. Open the Top Cover and then check that it is correctly locked in position.
   --> Remove, replace and re-lock the ITB unit.
2. Replace the ITB Unit.
3. If the fault continues after re-fitting the ITB unit several times check the voltage on Pin4 of CN10 on the Main PBA.
   --> Replace the ITB Harness if the voltage is not correct.
4. Replace the Main PBA.

Invalid Toner [Color]

This is caused by a wrong value of OEM Resistor in the Toner Cartridge.

1. Clean the 3 contact points on the Toner Cartridge and then re-install.
2. Replace the Toner Cartridge if the same error recurs.
3. Remove the Front Cover and then check the condition of the contacts between the OEM PBA and Terminal if the same error occurs.
   --> Clean or Re-assemble.
4. Replace the OEM PBA, HVPS and Main PBA in order if the same error recurs.

Invalid NEW Toner [Color]

This occurs when the Fusible Resistor in the Toner Cartridge does not become open circuit within regulation time.

1. Clean the 3 contact points on the Toner Cartridge and then re-install.
2. Replace the Toner Cartridge if the same error recurs.
3. Replace the OEM PBA, HVPS and Main PBA in order if the same error recurs.

Jam 0 In [Tray]

Paper is caught in the tray.

1. Open the Duplex Cover and then remove the paper stuck in the machine.
2. Open the Cassette and after removing any trapped paper ensure that the cassette is properly loaded, not overfilled and that paper guides are properly adjusted.
3. Check that the location of Lever of the Feed Sensor is normal.
4. Check that the operation of the Pick-Up Clutch under the Cassette is normal.
5. If the Clutch does not work check the condition of the cable harness to the Main PBA.
6. Replace the Main PBA if the voltage on Pin 2 of CN32, CN25 on the Main PBA is +24VDC.
   (Normal Output : Pin 1 = +24VDC, Pin 2 = 0V)

Jam In Duplex Path	Paper is caught while printing side 2.

1. Open the Duplex Cover and then remove the paper.
2. Remove any foreign objects in the Duplex Path.

Jam In Exit Area	Paper is caught in the Exit Area.

1. Check the Exit Sensor actuator.
   --> Replace the Fuser if the Exit Sensor actuator is damaged or bent.
2. Check that the Paper Guide Rib of the Output Guide is clean, and not damaged or distorted.
   --> Replace the Fuser or Exit Ass'y if it is not normal.
3. Check the condition and operation of the Fuser Rollers.

Jam Inside Printer	Paper is caught inside printer

1. Open the Duplex Cover and then remove the paper.
2. Check the Feed sensor actuator.
   --> Replace the Feed Sensor if it is damaged or distorted.

Load Manual Press Cont Key	This is only displayed when printing in Manual Feed mode and the MPF tray is empty..

Load a sheet of print material and press the On-Line/Continue button. You need to press the button for each page to be printed.

Load [Size] In [Tray]	The size of paper in the tray and the size of paper required by the document being printed are different.

*In this case the size of paper and tray is indicated.

Load the correct size of paper.

Memory Overflow	Not enough Memory Capacity.

The printer has insufficient memory to build the page image. The print process will be cancelled automatically and the printer will return to the Wait Mode. Add more memory to the printer.

Page Too Complex	The layout of document is to complex.

Try to print again after making the layout simpler and erasing any unnecessary images. If the message is appear repeatedly you will need to add extra memory to the printer.

Press Cont Key Replace [Ctrl]	Not enough Toner

* Press the [On-Line/Continue] button to continue printing.
* Replace the Toner Cartridge when the image quality becomes unacceptable.
* You can select if this message will be displayed on the LCD Pane or not.

Press Cont Key Replace Drum	The OPC drum is coming to the end of its usable life and will need replacing soon.

* Press the [On-Line/Continue] button to continue printing.
* Replace the OPC Drum when the image quality becomes unacceptable.
* You can select if this message will be displayed on the LCD Pane or not.

Press Cont Key Replace Transfer	The ITB Unit is coming to the end of its usable life and will need replacing soon.

* Press the [On-Line/Continue] button to continue printing.
* Replace the ITB Unit when the image quality becomes unacceptable.
* You can select if this message will be displayed on the LCD Pane or not.

Press Cont Key Replace T2 Roller	The T2 roller is coming to the end of its usable life and will need replacing soon.

* Press the [On-Line/Continue] button to continue printing.
* Replace the T2 roller when the image quality becomes unacceptable.
* You can select if this message will be displayed on the LCD Pane or not.

Ready IP Conflict	IP address conflict with the address of another device on the network.

This only occurs when the optional network interface is connected and configured for TCP/IP support. Change the IP Address.

Ready [CMYK] Low Toner	The indicated Toner Color cartridge is almost empty.

Replace the indicated Color Toner Cartridge.
To temporarily improve printing for a short time remove the indicated toner cartridge and rock it gently from side to side for a short time before replacing it.

Replace Drum Cartridge	This occurs when the OPC drum is not correctly installed.

1. Check that the OPC Unit is installed and locked correctly.
2. Check the OPC OEM Harness to the Main PBA.
   --> Refit or replace the harness if it is damaged.
3. Replace the Main PBA.

Replace Image Transfer	There is a problem with the ITB Unit installation.

* This occurs when the ITB Unit is not correctly installed and locked
* This occurs when the value of the OEM Resistor in the ITB Unit is incorrectly detected due to contamination of the contact.

1. Open the Top Cover and then check that the ITB Unit is installed and locked correctly.
2. Clean the contacts on the ITB Unit
3. Replace the ITB unit.

Replace Toner [Color]	It occurs when the Toner Cartridge of indicated Color is not installed.

*If the Toner Cartridge does not be installed
*The value of OEM Resistor be recognized by the value of opened due to the contamination of Contact point.

1. Open the Deve Cover and then check if the Toner Cartridge is installed.
2. Check if the contact point is contaminated.
3. Replace the Toner Cartridge.
4. Replace the OEM PBA, HVPS and Main PBA in order.

Tray2 Error	This occurs when Tray2 is not installed correctly.

Turn the printer off and re-install Tray2.

Tray2 Jam Cover Open	The cover on Tray 2 is open.

Check and ensure that the cover of Tray2 is closed properly.

Waste Toner Full/Not Install	Waste Toner Tank is full or not installed.

1. Check and replace the Waste Toner Tank or install it correctly.
2. Check that the Waste Toner Sensor actuator lever is free and not damaged or distorted.
3. Check the condition of the waste toner sensor cable harness and refit or replace if it is damaged.

MEMO

9. Exploded Views and Parts List (CLP-510/XBH)

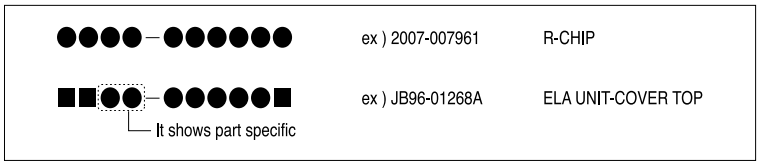
- Exploded drawings and service parts lists are given for items which may be expected to have a higher failure rate.
- Where a failure occurs you can identify the part in the exploded diagram and, using the parts cross reference number, refer to the appropriate parts list to identify the part number.

Note : Parts numbers given here are correct at the time of publication.
When ordering parts please use the on-line ordering system to check if there have been any changes to part numbers.

Part Number & Description format.

Part numbers and descriptions are defined according to a company standard. The information below will help you to understand the part number format and assist when ordering spare parts.

- **There are two types of Part number format.**



(● : number ■ : letter)

Type 1 : This format is used throughout Samsung on all product ranges. Typically it is used for small components and electronic parts.

Type 2 : This format is controlled by individual Samsung Divisions and is used on specific products, typically for mechanical parts. Type 2 format part numbers fall into 2 categories:

- **A/S privately used part :** It is only used for A/S .
- **Ass'y part :** Assemblies consisting of 2 or more parts. Also used for Service manuals, user guides and diagrams.

- Ass'y parts and A/S privately used Parts can be distinguished by the part Code and Description. They are always Type 2 format. The 2 leading characters indicate private or assembly parts.

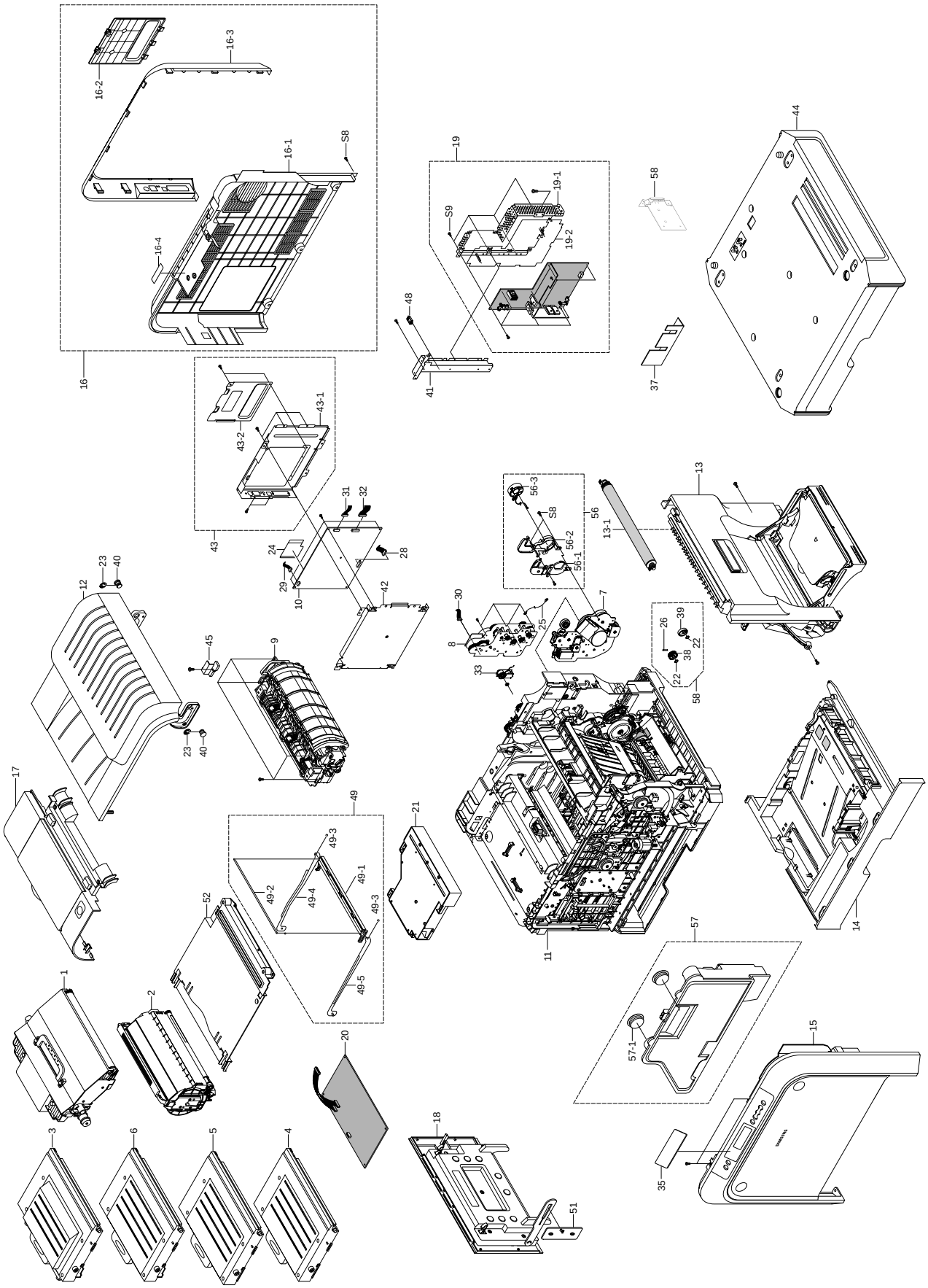
DIVISION	PART CODE	DESCRIPTION
A/S Private	**81-****** (JB81-00039A)	AS-********** (AS-USE)
ASS'Y Part	**75-****** (JB75-00068A)	MEC-******** (MEC-CHUTE)
ASS'Y Part	**92-****** (JB92-01131A)	PBA ********* (PBA MAIN-CONTROLLER)
ASS'Y Part	**97-****** (JB97-01089A)	MEA ********* (MEA UNIT-PULLEY IDLE)

Abbreviations for parts description

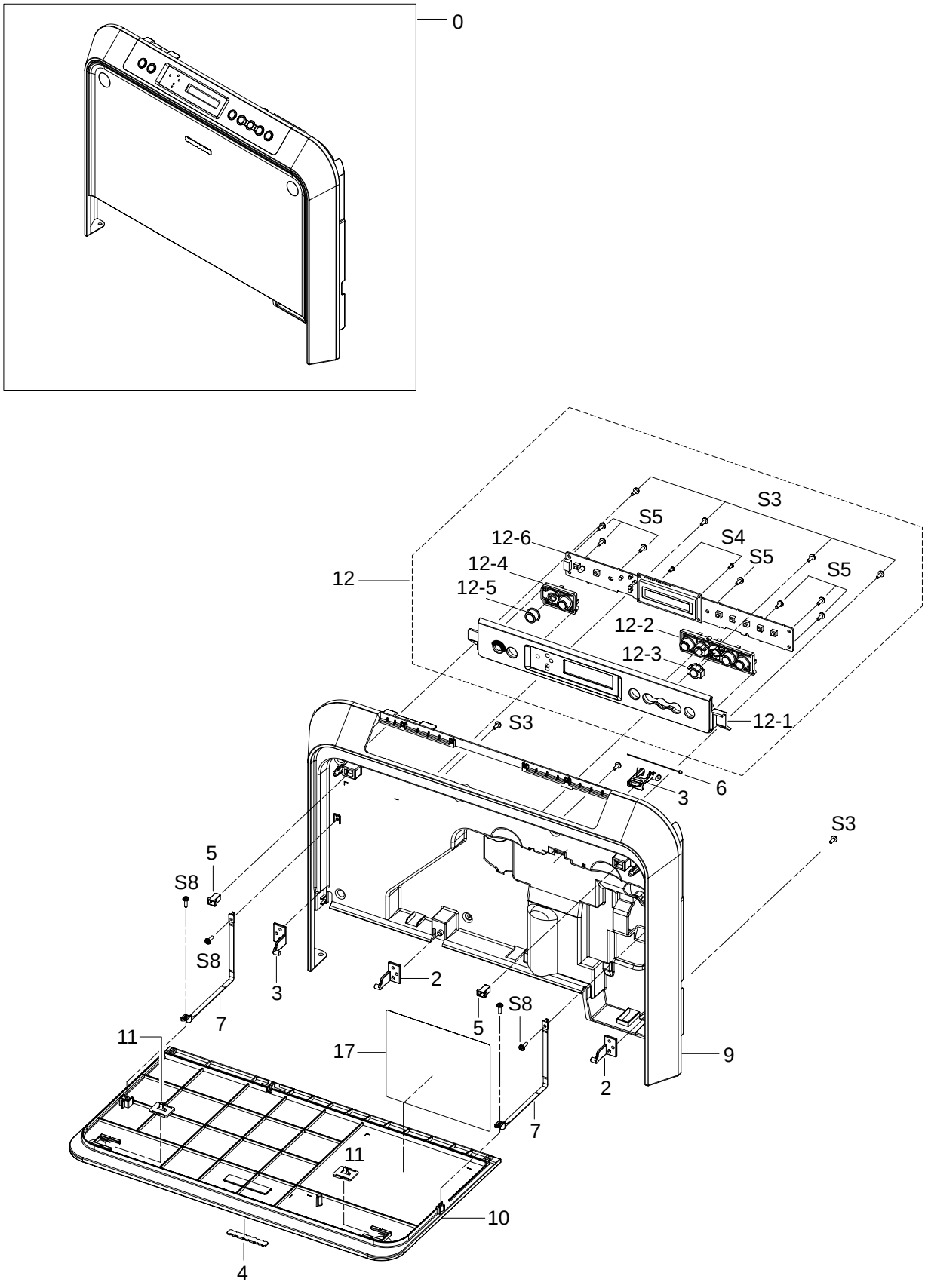
BRKT	Bracket: ex)IPR-BRKT SMPS	MEA	Mechanical Assembly: ex)MEA UNIT-BRKT ECU UPPER
CS	Compress: ex)SPRING-CS	MEC	Mechanic Combined unit: ex)MEC-BRUSH ANTISTATIC
ELA	Electrical Assembly: ex)ELA UNIT-ITB	PBA	Printed circuit Board Assembly: ex)PBA MAIN-CONTROLLER
HOU	Housing: ex)ELA HOU-COVER FRONT	PMO	Processing Mold: ex)PMO-COVER REAR
IPR	Iron Press: ex)IPR-BRKT SMPS	PPR	Plastic Press: ex)PPR-SHEET/GUIDE PAPER
M	Mold: ex)COVER-M-WASTE TONER UPPER	RPR	Rubber Press: ex)RPR-RUBBER

Content

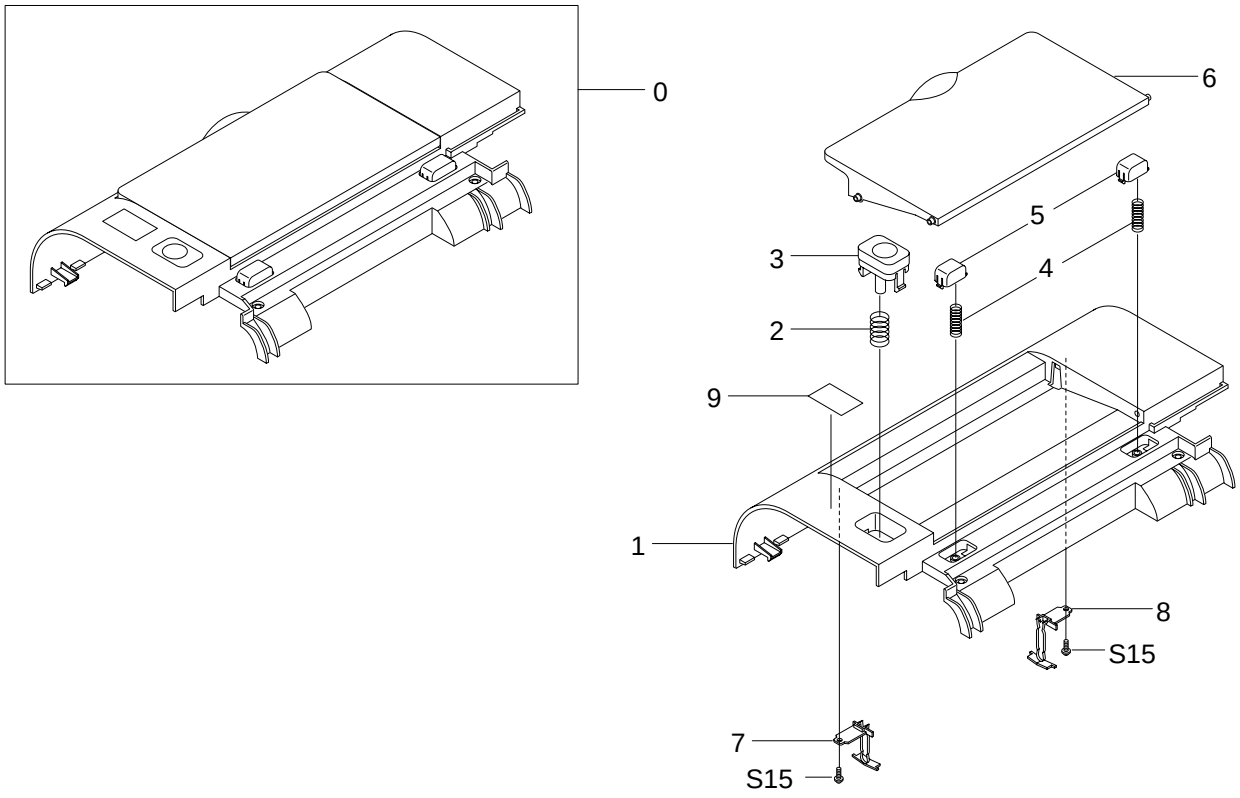
9.1 Main Exploded View



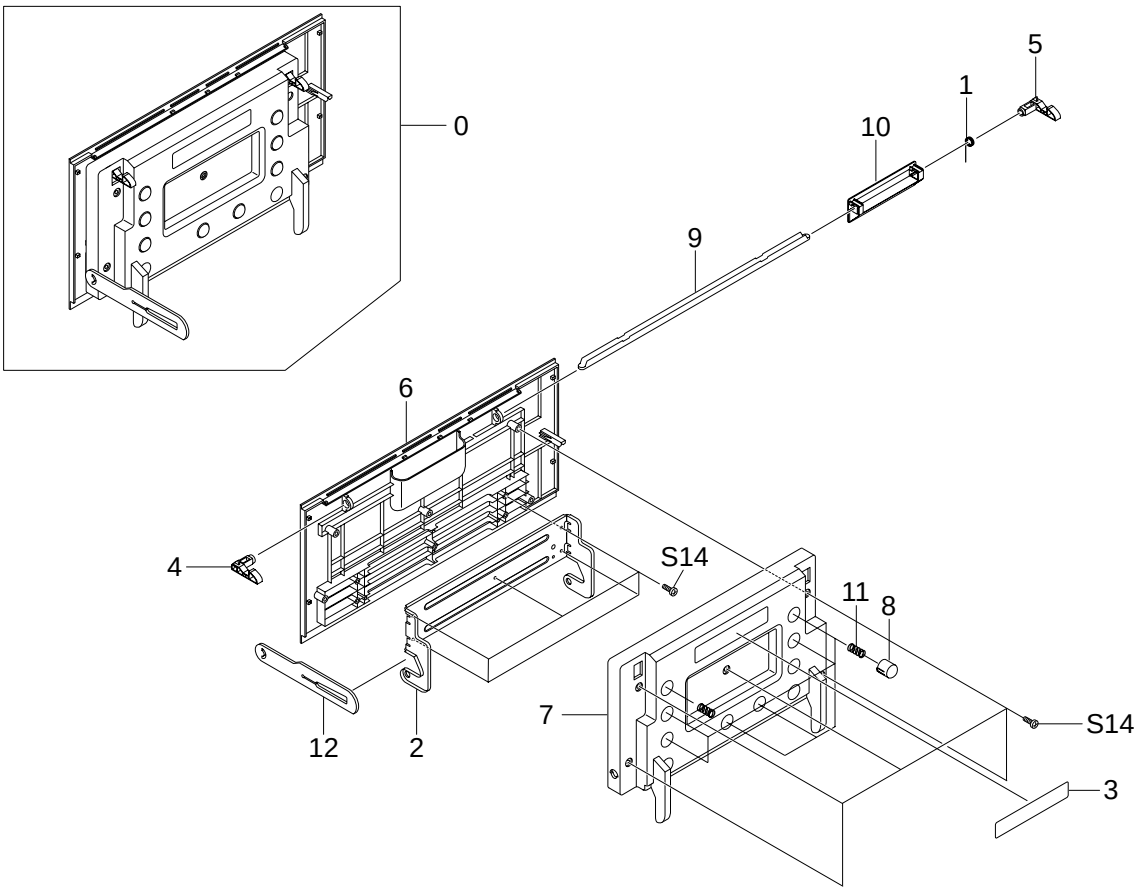
9.2 Cover Front Exploded View



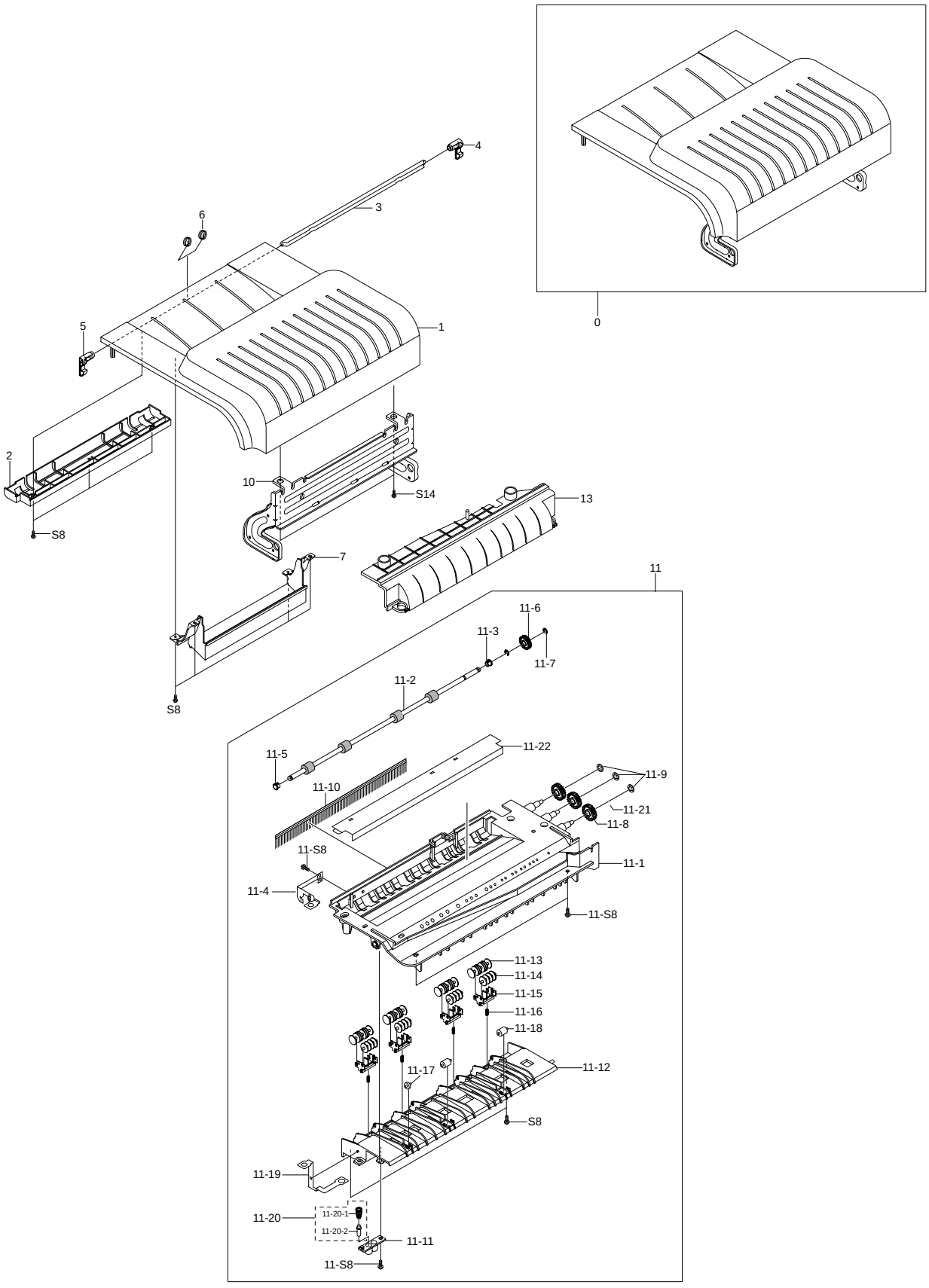
9.3 Cover Top Exploded View



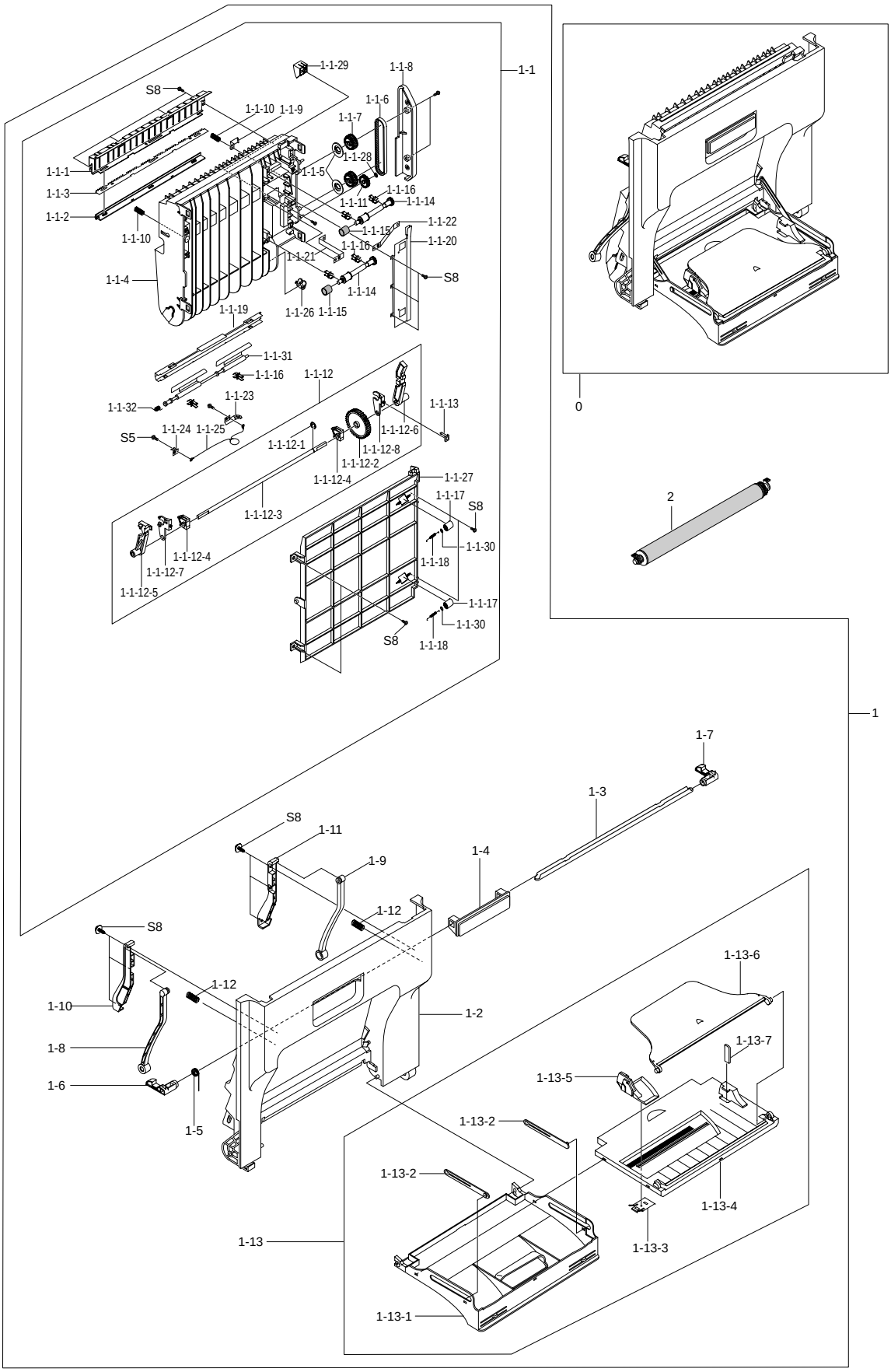
9.4 Cover Deve Exploded View



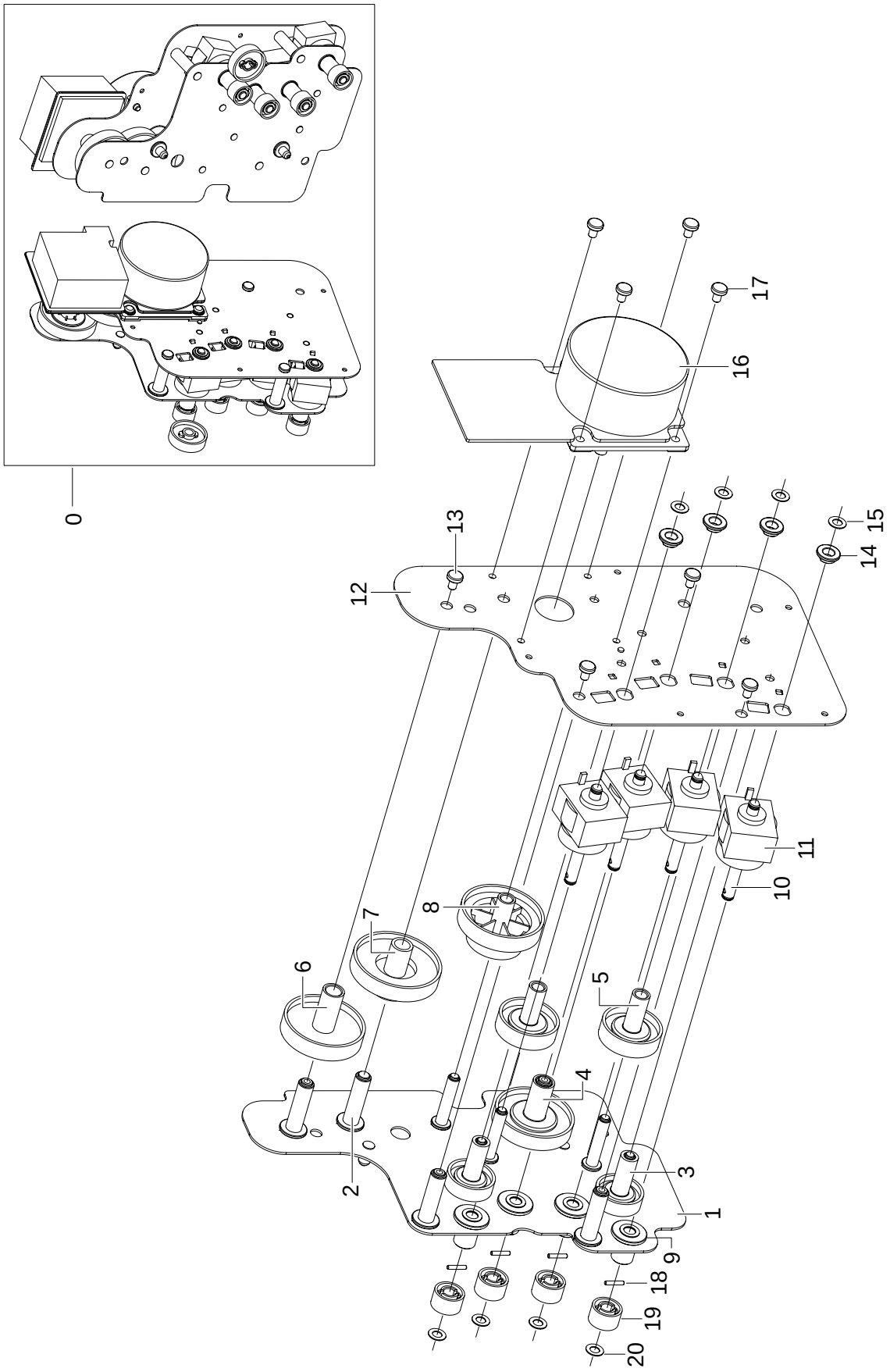
9.5 Exit Ass'y Exploded View



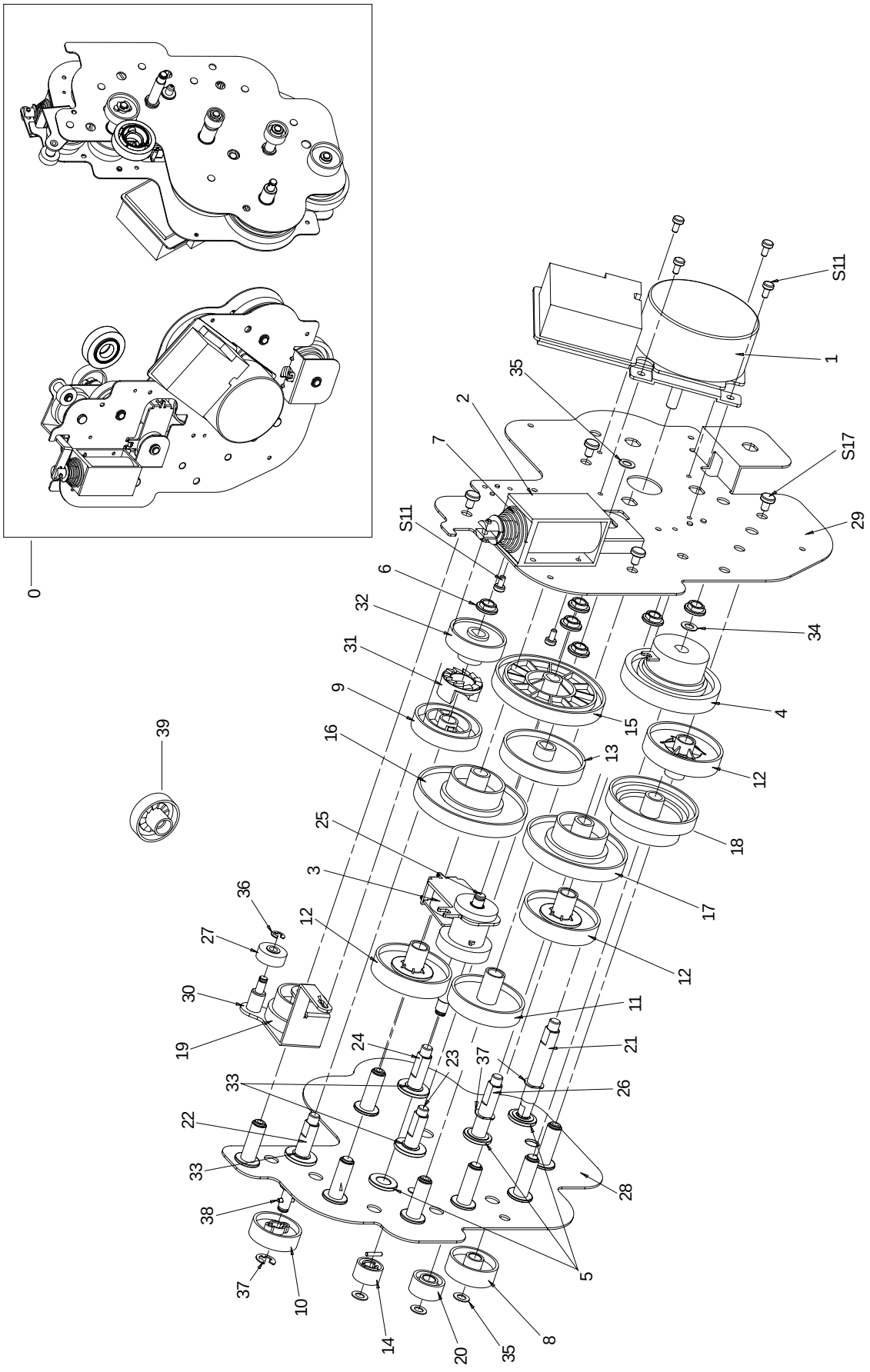
9.6 Duplex Ass'y Exploded View



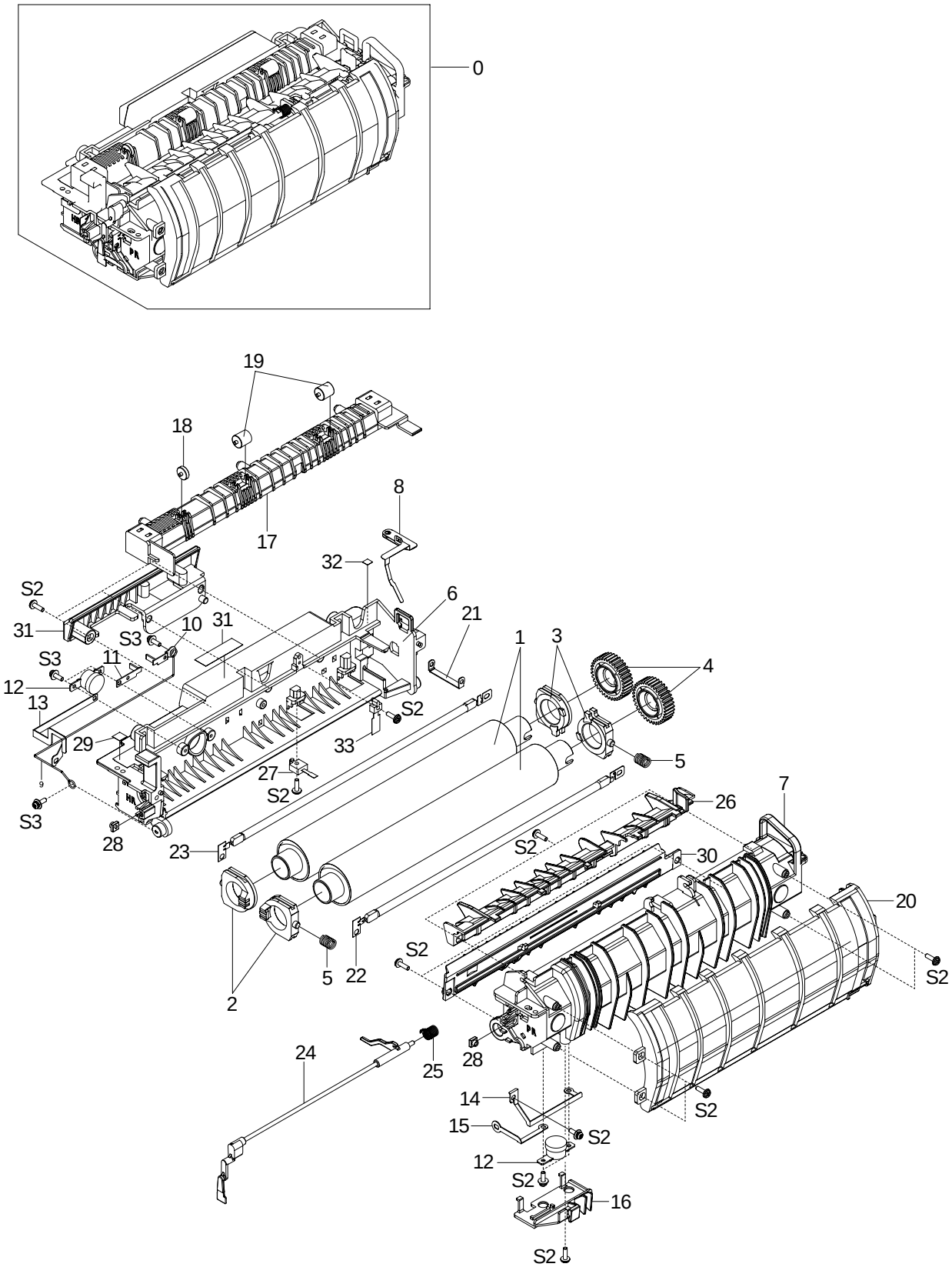
9.7 Deve-Drive Ass'y Exploded View



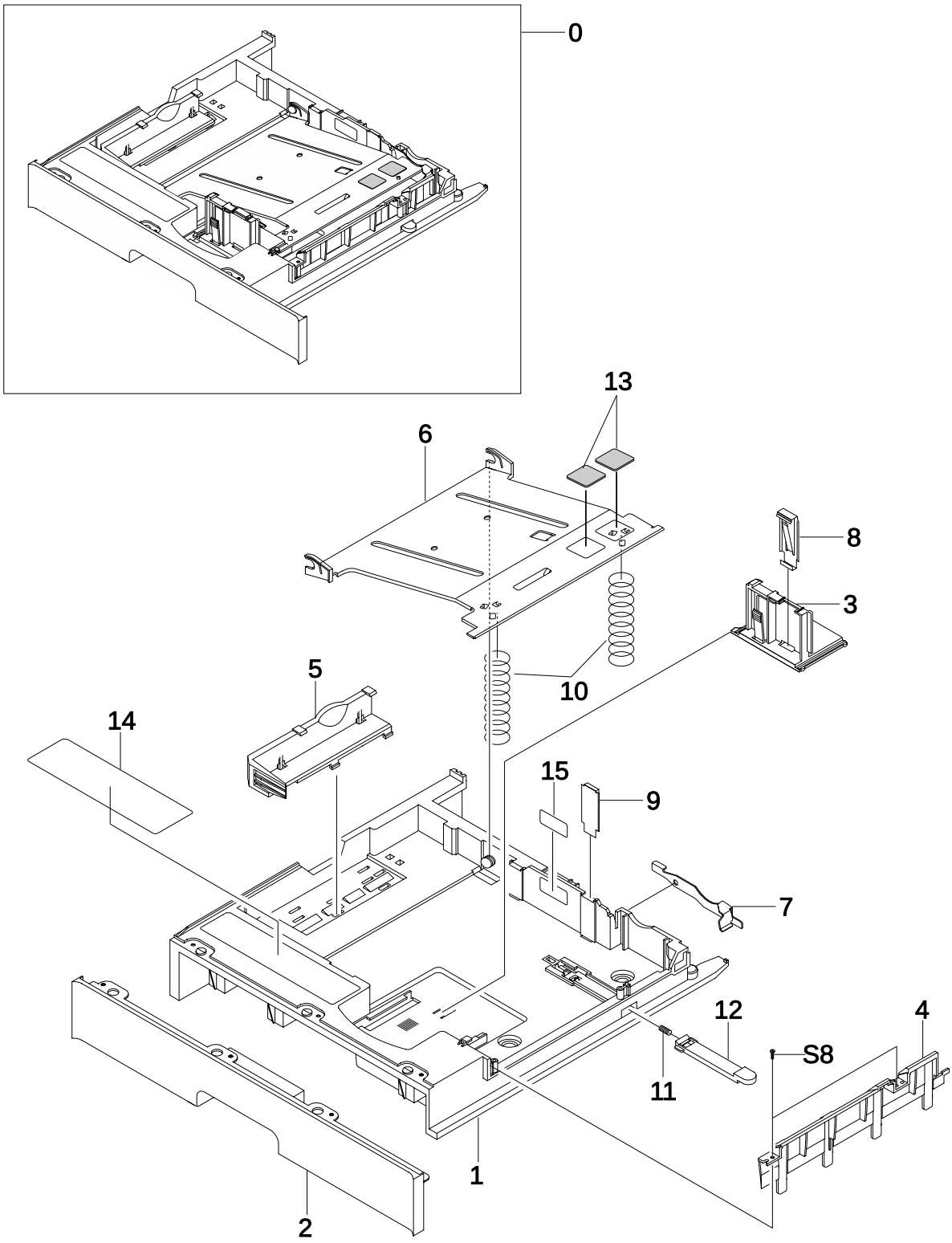
9.8 Main-Drive Ass'y Exploded View



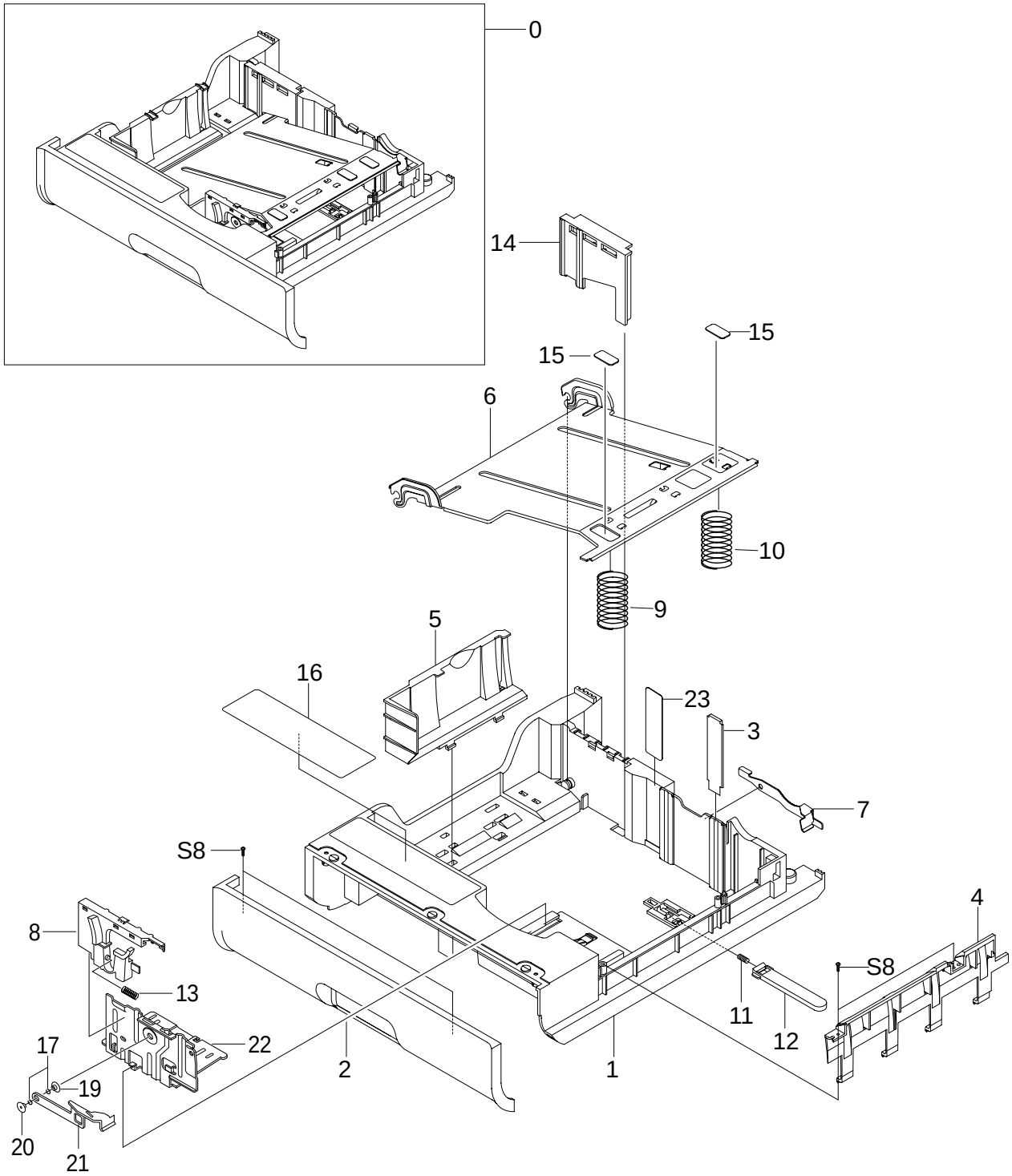
9.9 Fuser Ass'y Exploded View



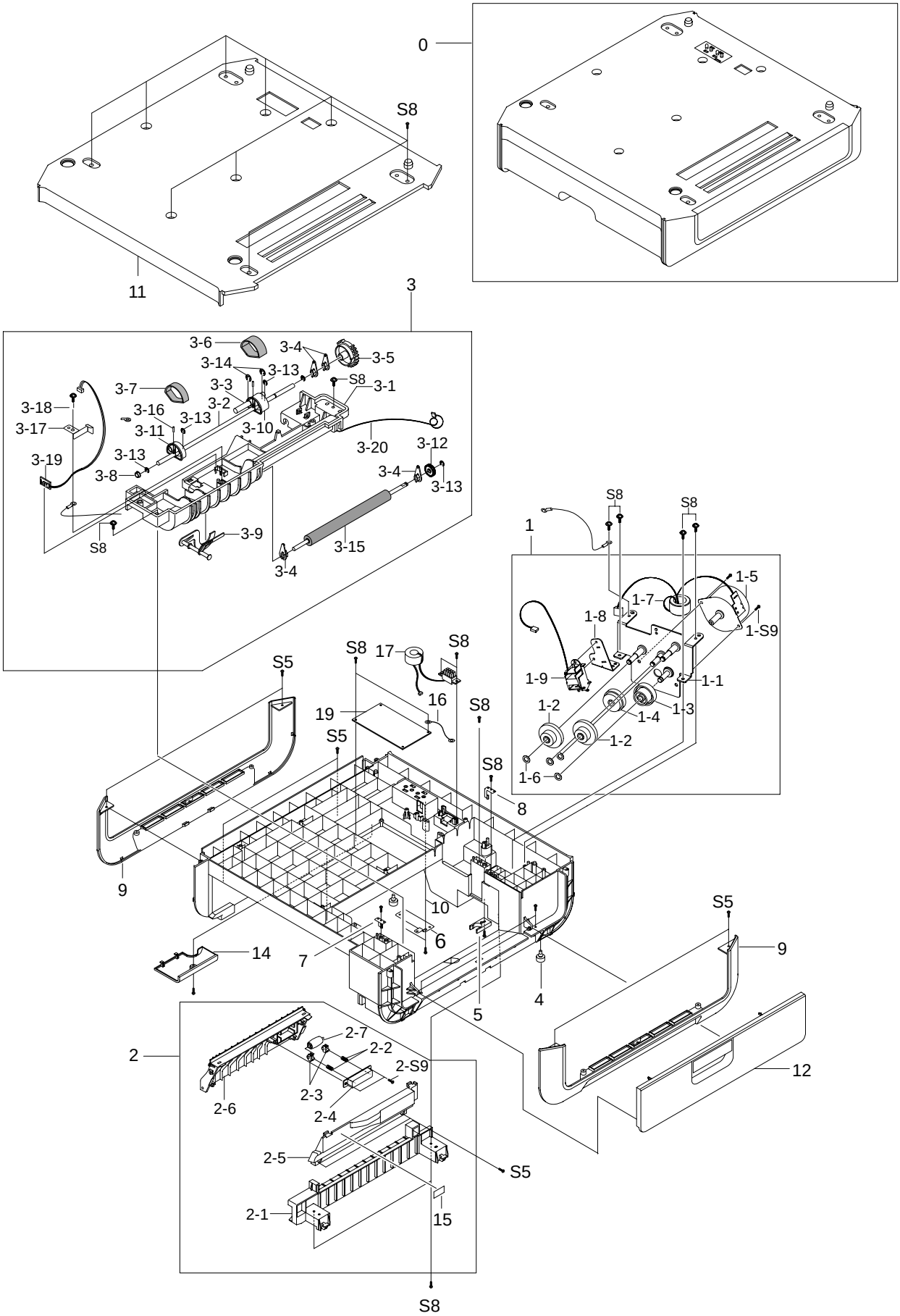
9.10. Cassette Ass'y Exploded View



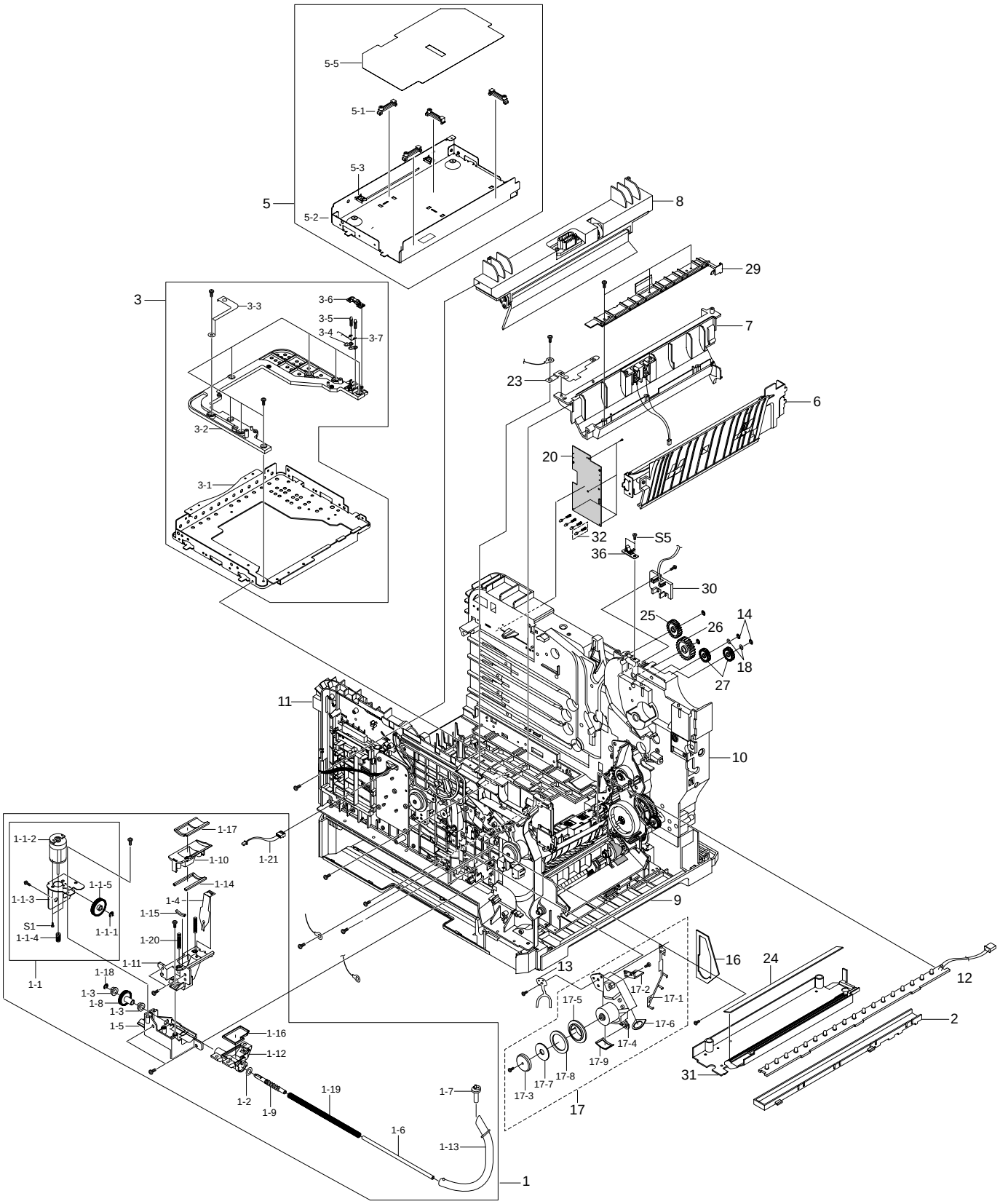
9.11. SCF Cassette Ass'y Exploded View



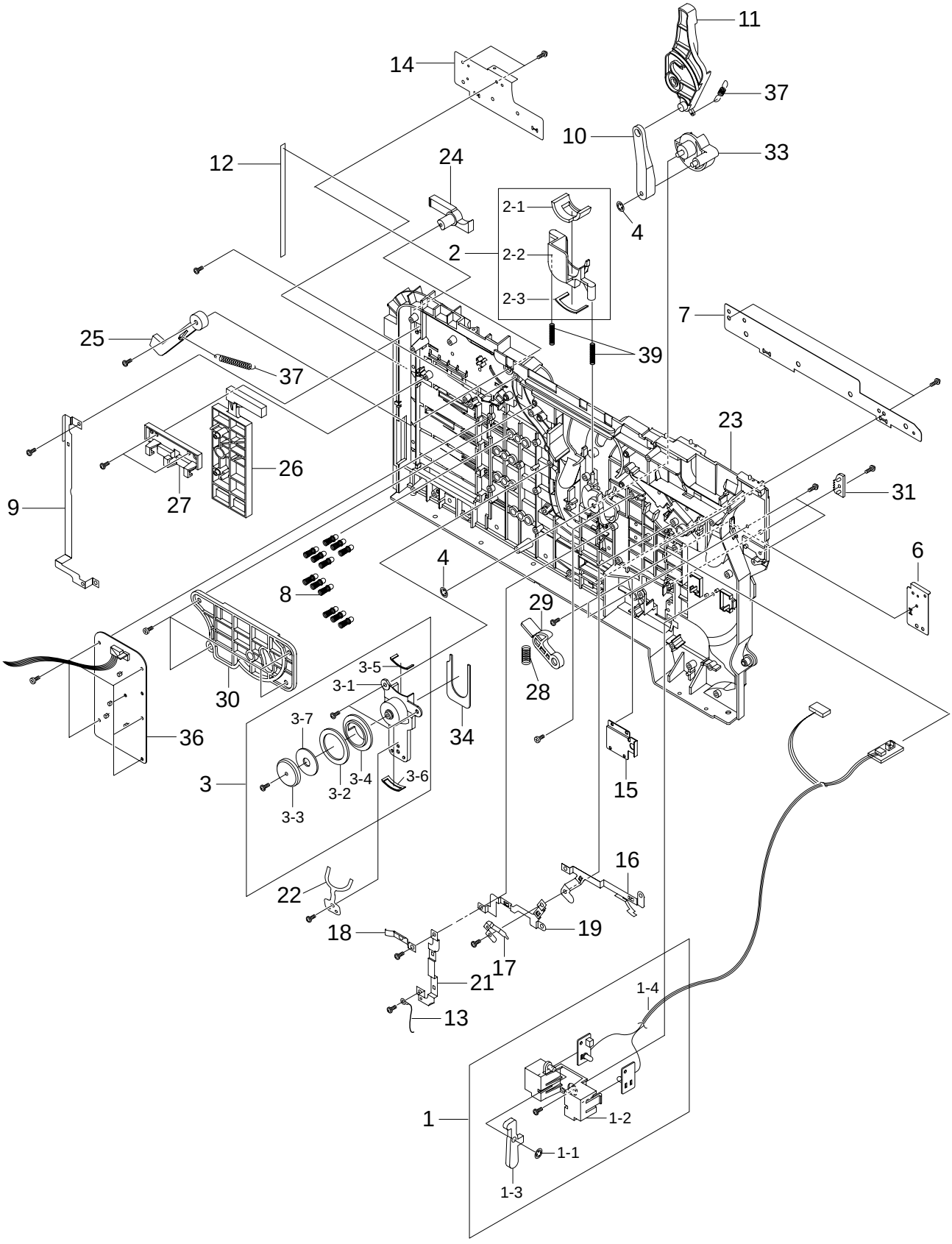
9.12. Frame SCF Ass'y Exploded View



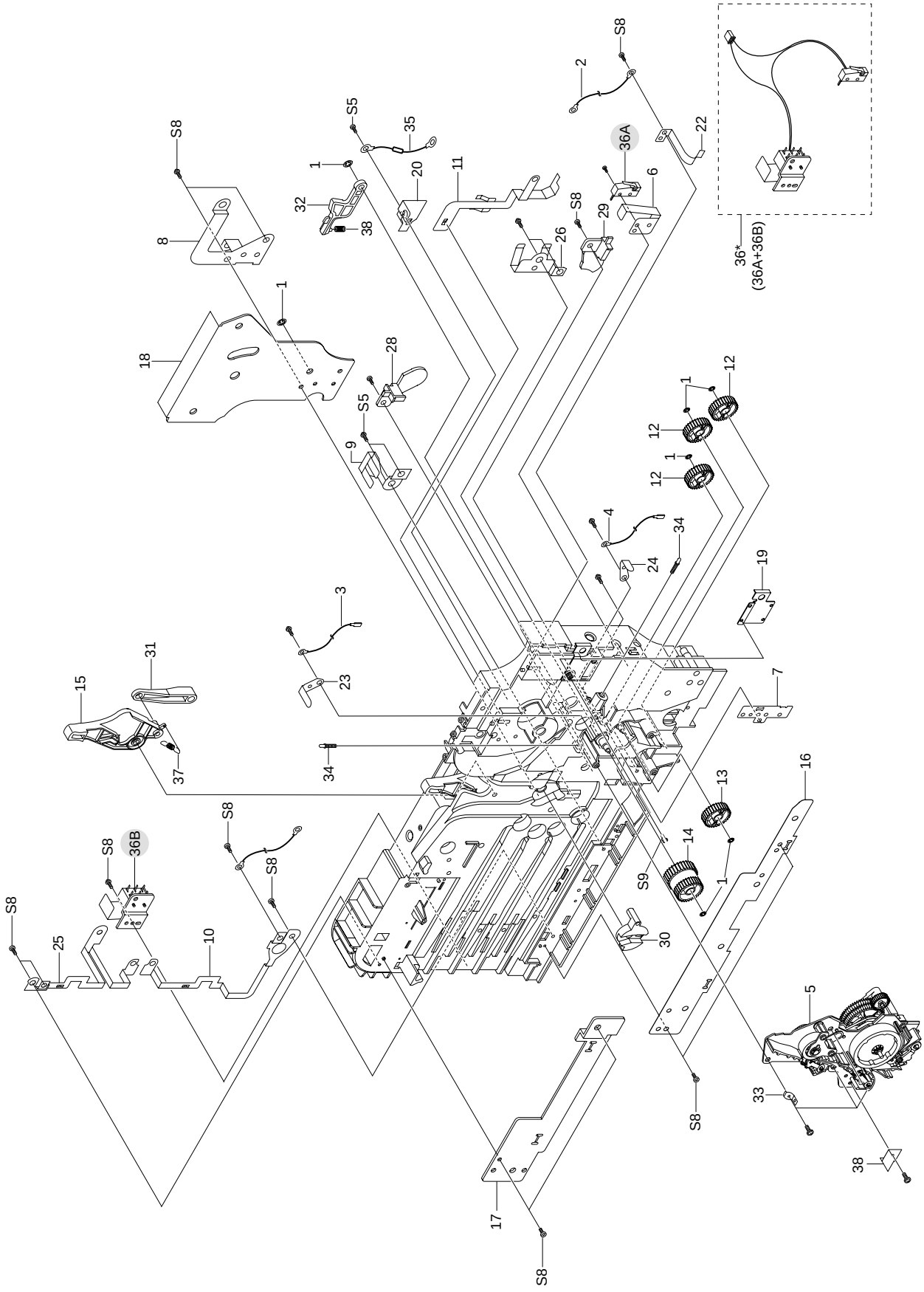
9.13 Main Frame Exploded View



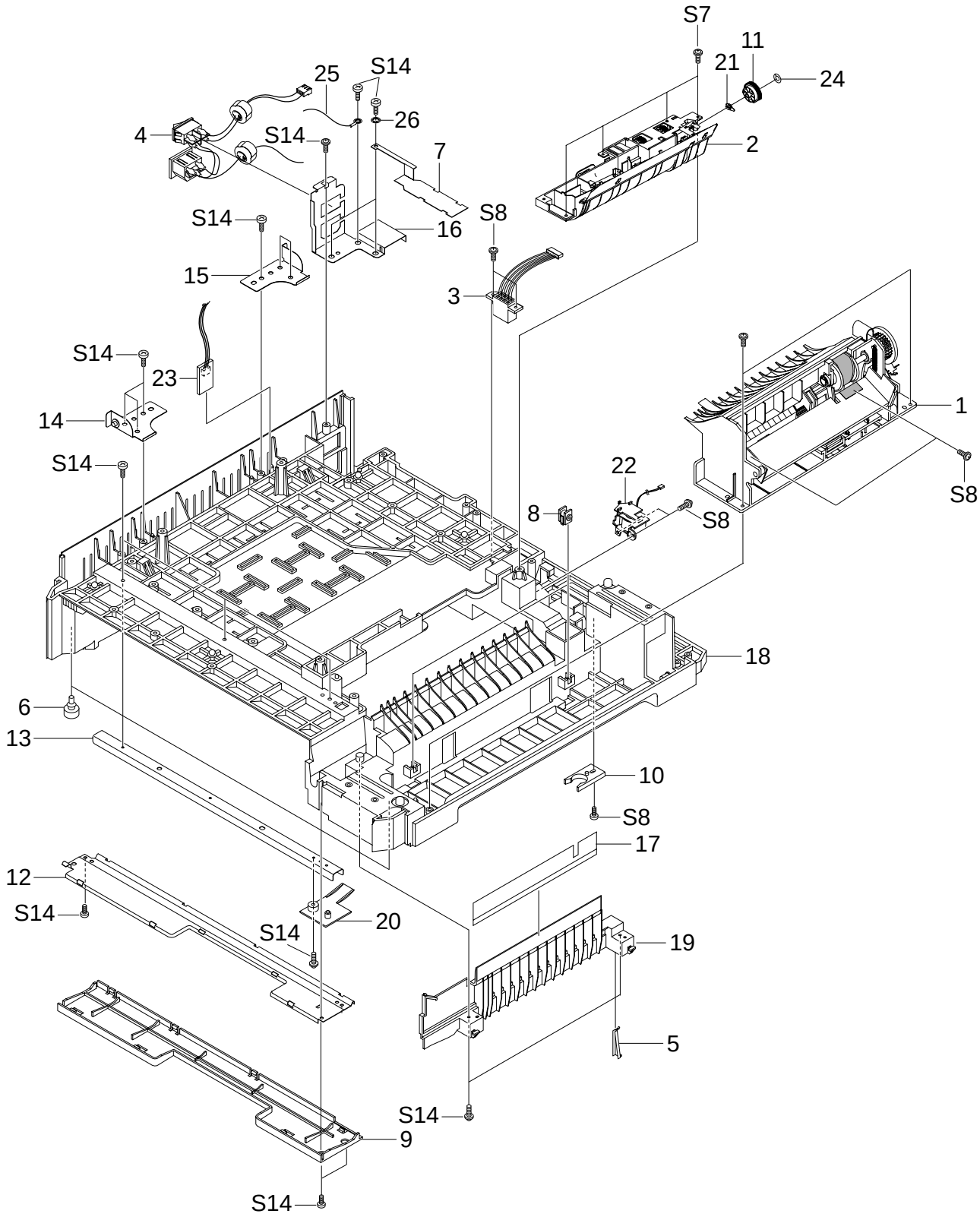
9.14 Front Frame Exploded View



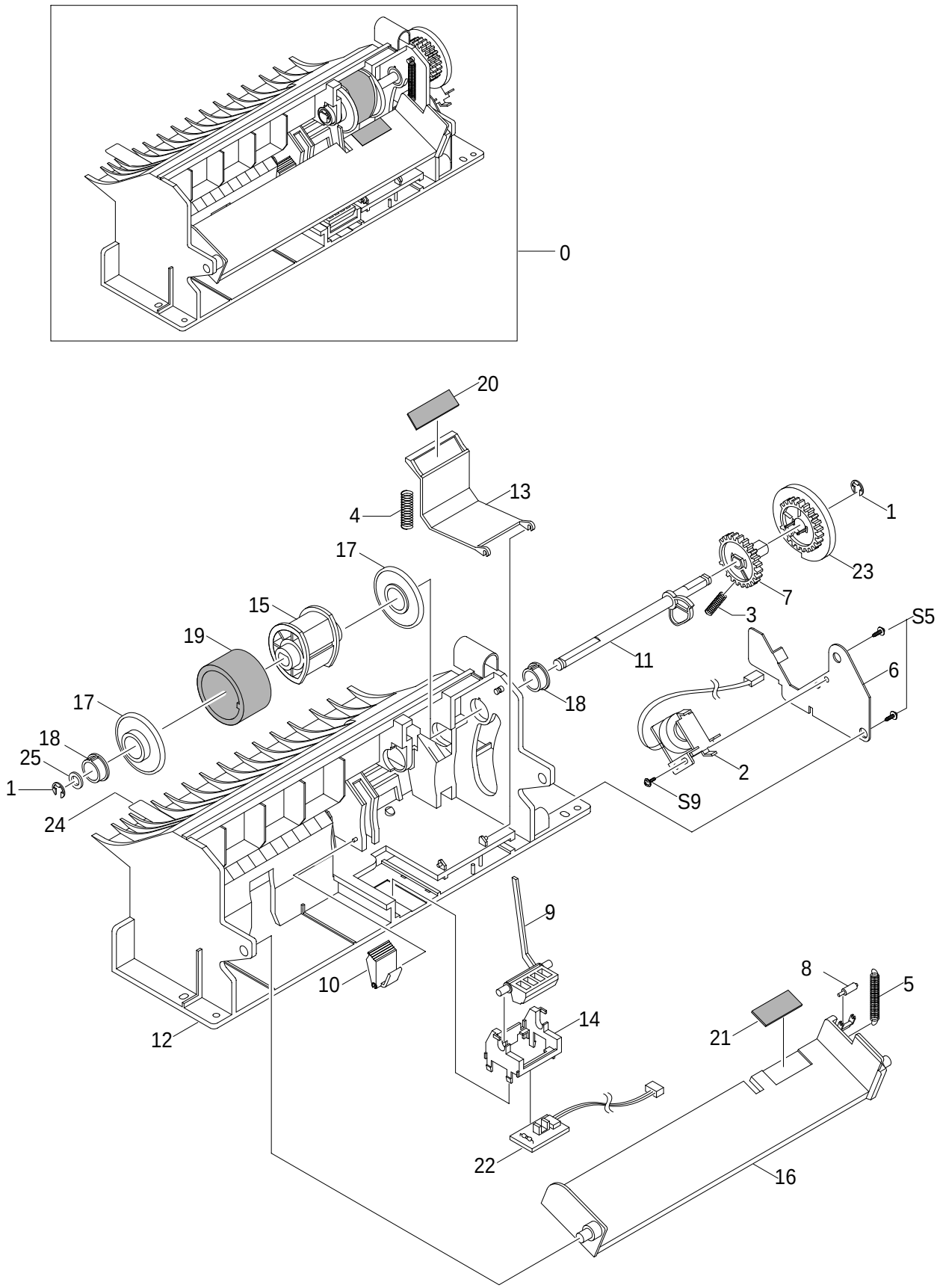
9.15 Rear Frame Exploded View



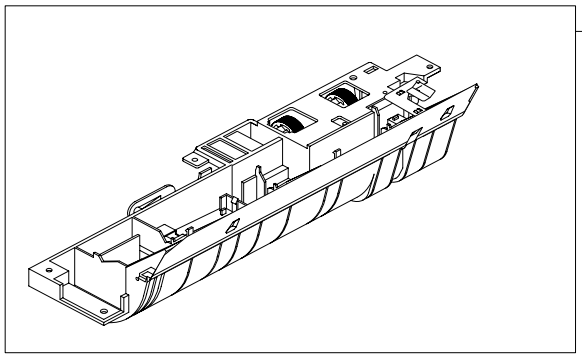
9.16 Base Frame Exploded View

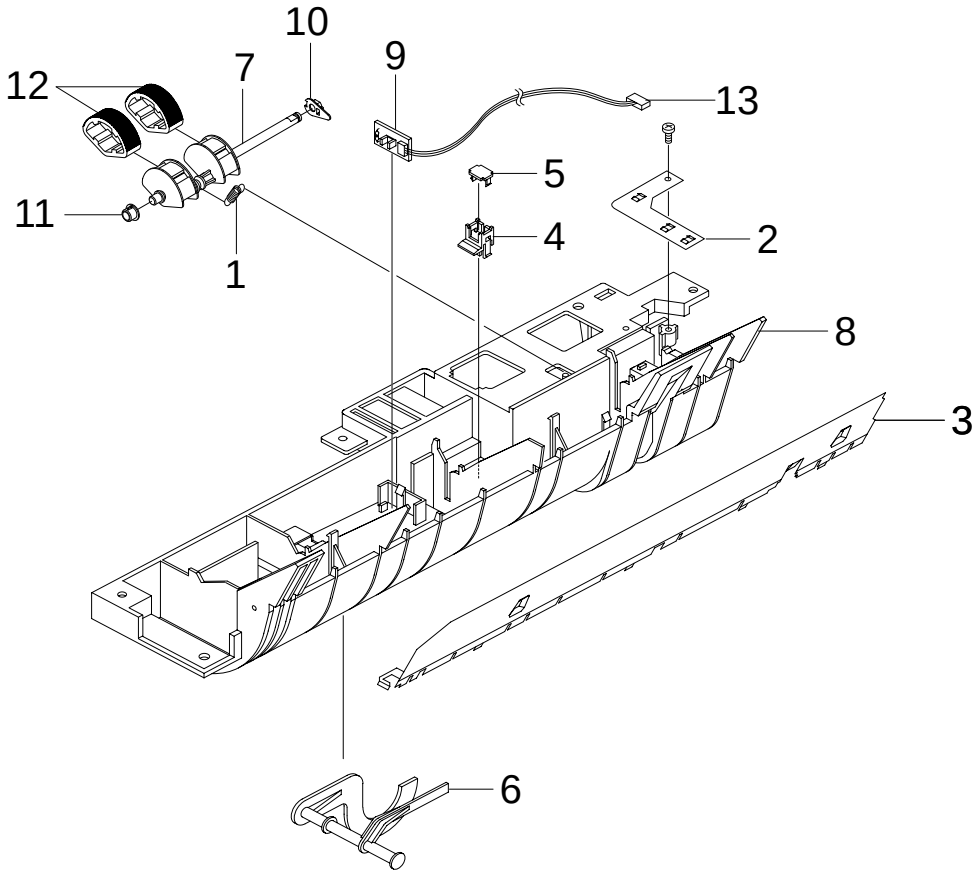


9.17 MP Ass'y Exploded View

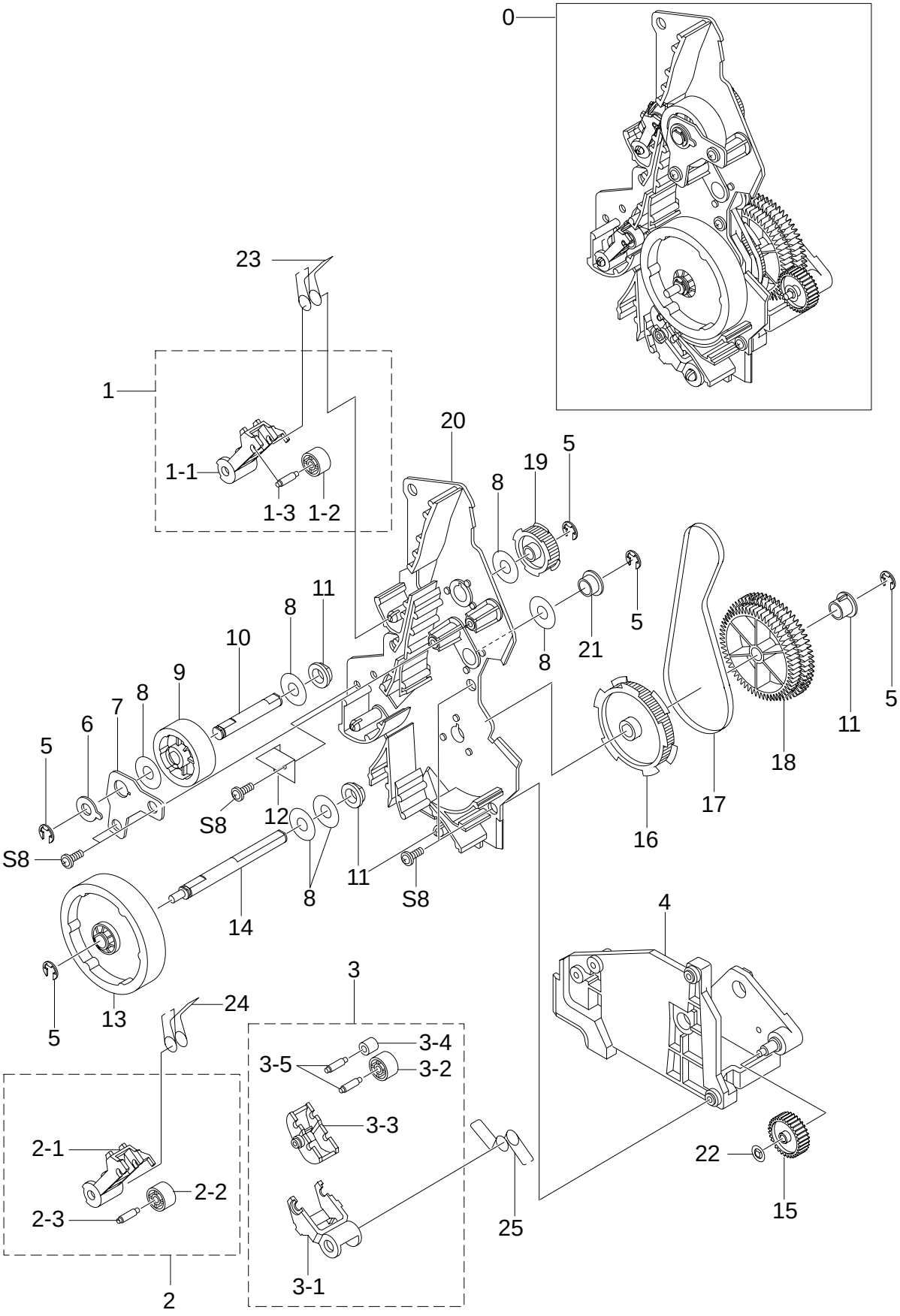


9.18 Pick-up Ass'y Exploded View

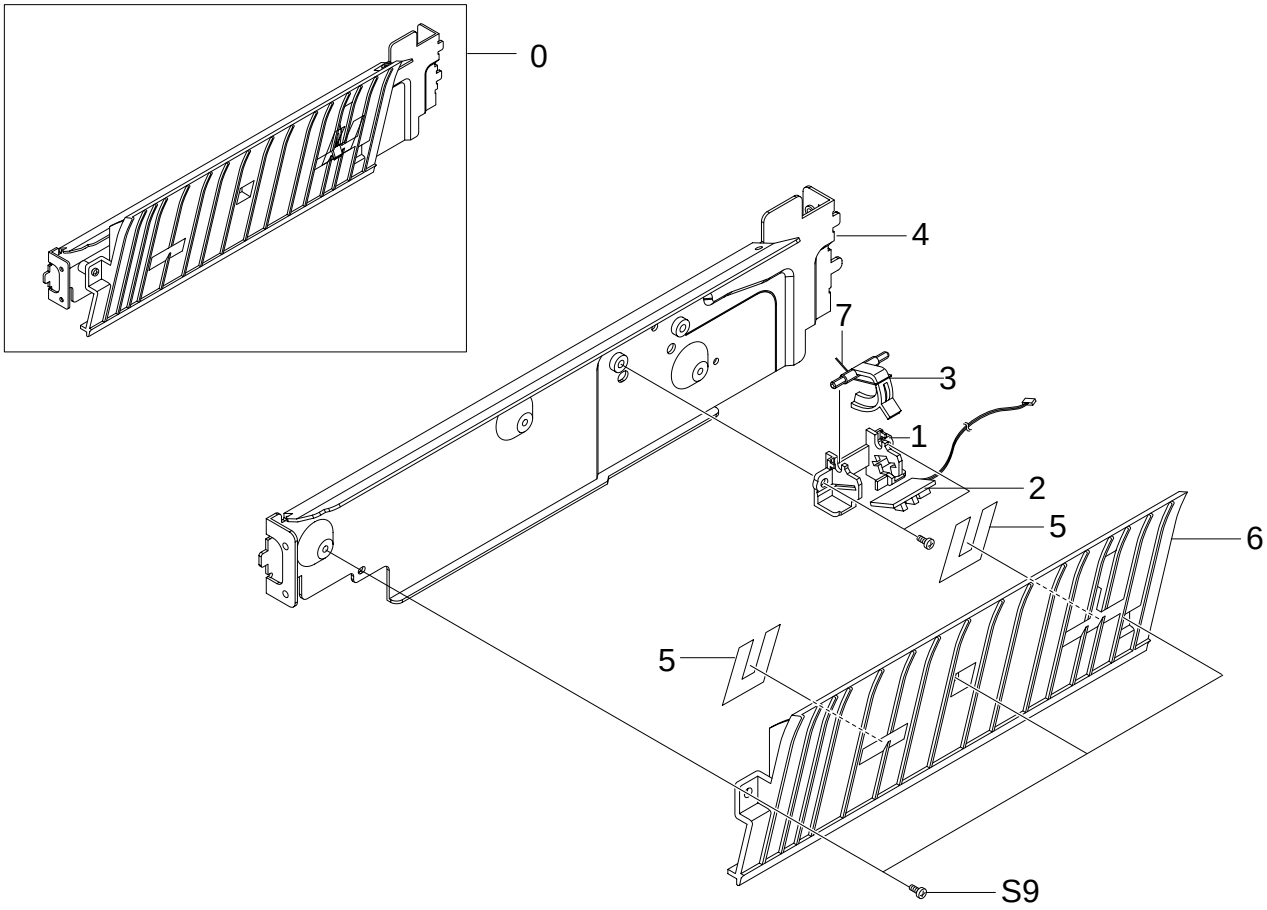




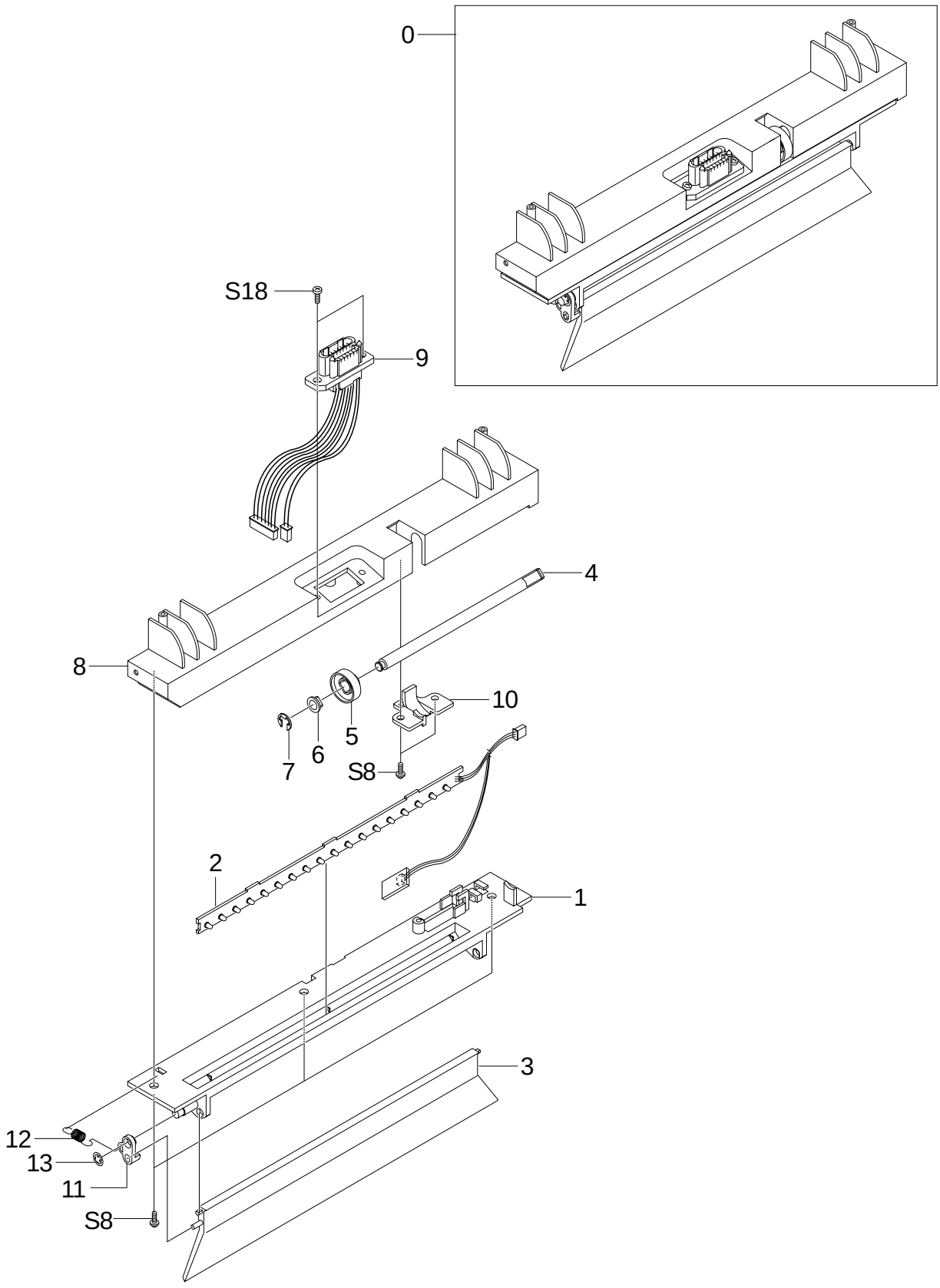
9.19 Feeder Ass'y Exploded View



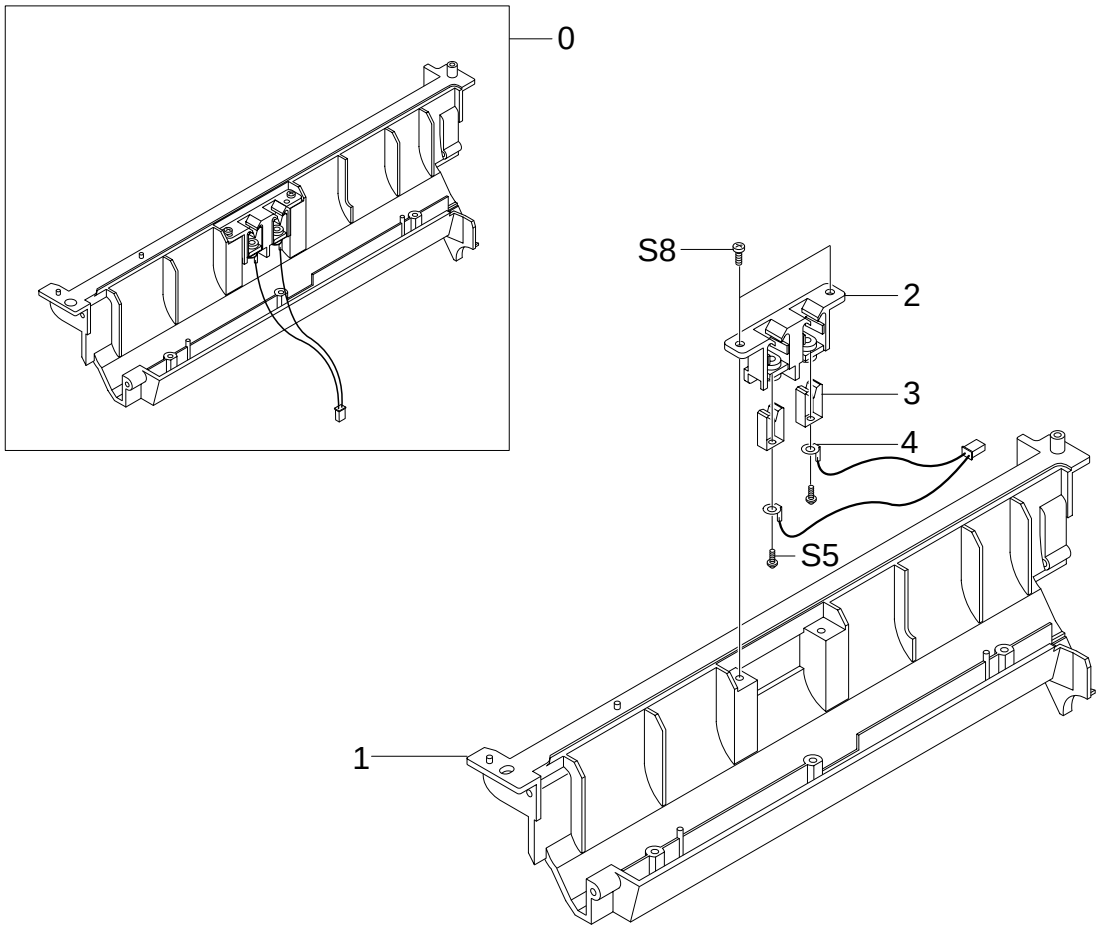
9.20 Guide Paper T2 Ass’y Exploded View



9.21 ITB Cam Ass'y Exploded View



9.22 Dummy Fuser Base Ass'y Exploded View



Parts List(Model code : CLP-510/XBH)

SA : Service Available, **SNA** : Service not Available

Draw#	Part Code	Description	Location	SNA
9.1 Main				
9.1-1	JC96-03189A	ELA UNIT-ITB_SET;CLP-510,SEC,XAA,ITB,SET		SNA
9.1-2	JC96-03190A	ELA UNIT-OPC_SET;CLP-510,SEC,XAA,OPC,SET		SNA
9.1-3	JC96-03191B	ELA UNIT-DEVE BK_2K;CLP-510,SEC,SEE,DEV		SNA
9.1-4	JC96-03194B	ELA UNIT-DEVE C_1.5K;CLP-510,SEC,SEE,DEV		SNA
9.1-5	JC96-03193B	ELA UNIT-DEVE M_1.5K;CLP-510,SEC,SEE,DEV		SNA
9.1-6	JC96-03192B	ELA UNIT-DEVE Y_1.5K;CLP-510,SEC,SEE,DEV		SNA
9.1-7	JC72-01214A	PMO-COVER DEVE INNER;CLP-500,HIPS,IVORY,	T2152	SA
9.1-8	JC96-03237A	ELA UNIT-DE_DRIVE;CLP-510,SEC,EXPORT,-,-	T2073	SA
9.1-9	JC66-00563A	ARM-COVER DEVE HINGE;CLP-500,SECC,T1.2,-	H3000	SNA
9.1-10	JC92-01630C	PBA MAIN-CONT_BB_PLUS;CLP-510,SEC,KOREA,	M0203	SA
9.1-11	JC97-02037A	MEA MAIN-FRAME;CLP-510,SEC,EXPORT,-,-,-,	F1941	SA
9.1-12	JC97-02039A	MEA-EXIT;CLP-510,SEC,EXPORT,-,-,-,-	E3212	SA
9.1-12-4	JC72-01199B	PMO-OPE KEY 2;CLP-510,ABS,36024,-,-,HB,-		SNA
9.1-13	JC97-01756A	MEA-DUPLEX;CLP-500,SEC,EXPORT,-,-,-,-	D3027	SA
9.1-13-1	JC97-01761A	MEA UNIT-T2;CLP-500,SEC,EXPORT,-,-,-,-	K3629	SA
9.1-14	JC97-01753A	MEA-CASSETTE;CLP-500,SEC,EXPORT,-,-,-,-	K3657	SA
9.1-15	JC96-03235A	ELA HOU-COVER FRONT;CLP-510,SEC,EXPORT,-	H0010	SA
9.1-16	JC97-01764E	MEA HOU-COVER REAR;CLP-510,SEC,EXPORT,PA	C3112	SA
9.1-16-1	JC72-01201A	PMO-COVER REAR;CLP-500,HIPS,IVORY,-,HR-1	Z2673	SA
9.1-16-2	JC72-01202E	PMO-_M_COVER REAR DECO;CLP-510,HIPS,D.GR		SNA
9.1-16-3	JC72-01203A	PMO-COVER OPEN BOARD;CLP-500,HIPS,IVORY,	Z2658	SNA
6-1-16-4	JC68-01176A	LABEL(P)-REAR;CLP-500,-,YUPO PAPER,100G,	L0000	SNA
9.1-17	JC97-01765A	MEA HOU-COVER TOP;CLP-500,SEC,EXPORT,-,-	Z2375	SA
9.1-18	JC97-01766A	MEA HOU-COVER DEVE;CLP-500,SEC,EXPORT,-,	T2119	SA
9.1-19	JC44-00077A	SMPS-V2;CLP-510,-,AC/DC,50W,210-230VAC,-	S7035	SA
9.1-19-1	JC70-00415A	IPR-BRKT SMPS;CLP-500,SECC,-,T1.0,-,-,-	S7030	SA
9.1-19-2	JC63-00236A	SHEET-SMPS;CLP-500,PVC,T=0.5,W174.0,L259	S0002	SA
9.1-20	JC44-00075A	HVPS-BB_PLUS;-,24V,21.6V~26.4V,-,MAX 5KV	S7027	SA
9.1-21	JC59-00020C	UNIT-LSU BIGBANG PLUS;CLP-510,-,-,600DPI	L7045	SA
9.1-22	6031-001255	WASHER-PLAIN;NYLON,CUTTING,ID5,OD9,T0.5,		SA
9.1-23	6044-000125	RING-E;ID4,OD9,T0.6,PASS,STSC	T2001	SA
9.1-24	JC70-00382A	IPR-BRKT GUIDE ECU C;CLP-500,SECC,-,T1.0	B0002	SNA
9.1-25	JB39-00103A	CBF HARNESS-LIU GND;SCX-1110F,WIRE,UL100	L5004	SA
9.1-26	JB70-00168A	ICT-PIN ADF;SCX-1110F,STS303,D2.0,-,-,-,	A2006	SA
9.1-28	JC39-00271A	CBF HARNESS-MAIN LSU;CLP-500,WIRE HARNES	L7005	SA
9.1-29	JC39-00399A	CBF HARNESS-PANEL;CLP-600,WIRE HARENSS,U		SNA
9.1-30	JC39-00389A	CBF HARNESS-DEVE_MT;CLP-510,WIRE HARNESS		SA
9.1-31	JC39-00293A	CBF HARNESS-MAIN_MOTOR;CLP-500,WIRE HARN	M2052	SA
9.1-32	JC39-00296A	CBF HARNESS-MAIN_SMPS;CLP-500,WIRE HARNE	H1149	SA
9.1-33	JC47-00007A	MEP-CLUTCH CAM SOLENOID;-,CLP-500,3.1W,D	C9046	SA
9.1-34	JC61-00984A	BUSH-M-D8 L5;CLP-510,POM,ID8.0,OD12.0,L5	B0010	SA
9.1-35	JC63-00548A	SHEET-WINDOW LCD;CLP-510,PC,T0.5,-,-,-,-	S7031	SA
9.1-36	JC63-00234A	SHEET-HVPS;MLC-500,PC,T=0.5,W136,L250,-,	S0005	SNA
9.1-37	JC63-00549A	COVER-M-SMPS;CLP-510,ABS,-,-,-,-,-,BLK,5	S7034	SA
9.1-38	JC66-00478A	GEAR-OPC DRIVE 2_Z40;CLP-500,POM,DE20028	D4045	SA
9.1-39	JC66-00512A	CAM-T2 ENGAGE;CLP-500,POM,-,-,BLACK,L5.0	C0011	SNA
9.1-40	JC66-00616A	SHAFT-COVER EXIT HINGE;CLP-500,SUM24L,L7	H3068	SA
9.1-41	JC70-00382A	IPR-BRKT GUIDE ECU C;CLP-500,SECC,-,T1.0	B0002	SNA
9.1-42	JC61-00978A	BRACKET--P-ECU LOWER;CLP-510,SECC,T1.0,-		SNA
9.1-43	JC97-01760A	MEA UNIT-BRKT ECU UPPER;CLP-500,SEC,EXPO	K3532	SA
9.1-43-1	JC70-00410A	IPR-BRKT ECU UPPER;CLP-500,SECC,-,T0.5,-	B0005	SNA
9.1-43-2	JC70-00411A	IPR-BRKT ECU OPTION;CLP-500,SECC,-,T0.5,	B0006	SNA

SA : Service Available, **SNA** : Service not Available

Draw#	Part Code	Description	Location	SNA
9.1-45	JC72-01147A	PMO-COVER SENSOR BASE;CLP-500,HIPS,BLACK	C0013	SNA
9.1-48	6502-001093	CABLE CLAMP;DAWS-3NE,ID11*L34.8,-,NYLON6	C0014	SNA
9.1-49	JC97-01838A	MEA UNIT-LSU CLEANER;CLP-500,SEC,EXPORT,	L7026	SA
9.1-49-1	JC64-00093A	SHUTTER-LSU CLEANER;CLP-500,PC/ABS,T2.5,	C0016	SNA
9.1-49-2	JC66-00673A	SHAFT-CLEANER;CLP-500,SUM 24L,L229.9,D3.	S0007	SNA
9.1-49-3	6044-000121	RING-E;ID2,OD5,T0.4,PASS,STSC	R0001	SA
9.1-49-4	JC61-00843A	PLATE-LINK REAR;CLP-500,SECC,T1.2,-,-,-	R0002	SNA
9.1-49-5	JC61-00844A	PLATE-LINK FRONT;CLP-500,SECC,T1.2,-,-,-	F0003	SNA
9.1-56	JC97-01949A	MEA UNIT-DUCT FUSER;CLP-500,SEC,EXPORT,-	D0010	SA
9.1-56-1	JC72-01150A	PMO-DUCT FUSER LOWER;CLP-500,PP,BLACK,-	D0008	SNA
9.1-56-2	JC72-01151A	PMO-DUCT FUSER UPPER;CLP-500,PP,BLACK,-	D0009	SNA
9.1-56-3	JC31-00025A	FAN-DC;AD0624MSA70GL(R1)DOL,CLP-500,PBT+	F5016	SA
9.1-57-1	JC63-00271A	COVER-M-WASTE TONER UPPER;CLP-500,ABS,-	T2020	SA
9.1-57-2	JC63-00272A	COVER-M-WASTE TONER LOWER;CLP-500,ABS,-	T2019	SA
9.1-57-3	JC67-00044A	CAP-TONER OPC;CLP-500,LDPE,-,-,-,GREEN,M		SNA
9.1-51	JC72-01176A	PMO-DEVE OPEN LINK GUIDE;CLP-500,HIPS,BL	O0002	SNA
9.1-52	JC63-00308A	COVER-M-LSU;CLP-500,HIPS,T2.0,-,-,HB,-,B	C0017	SA
9.2 Cover Front				
9.2-0	JC96-03235A	ELA HOU-COVER FRONT;CLP-510,SEC,EXPORT,-	H0010	SA
9.2-2	JC63-00180A	COVER-FRONT HINGE R;CLP-500,POM,-,-,-,-	H3010	SA
9.2-3	JC64-00080A	LOCKER-M-WASTER TANK;CLP-500,PC/ABS,ICE	L6012	SA
9.2-5	JB64-00007A	LOCKER-LATCH PUSH;MJC-3305/CPQ,POM,BLK,-	L2004	SA
9.2-6	JC64-00087A	LOCKER-TANK PIN;CLP-500,SUS304-WPB,-,-,-	L6017	SA
9.2-7	JC72-00766A	PMO-TIE STOPPER;SCX-5100,-,NYLON66,NTR,-	K4094	SA
9.2-9	JC63-00546A	COVER-M-FRONT INNER;CLP-510,HIPS,-,-,-,H	Z2580	SA
9.2-10	JC72-01194A	PMO-COVER FRONT OPEN;CLP-500G,ABS,L-GRAY		SNA
9.2-11	JC72-01195A	PMO-COVER FRONT PUSH;CLP-500,POM,WHITE,-	P8003	SA
9.2-12-1	JC63-00547A	COVER-M_OPE PANEL;CLP-510,HIPS,-,-,-,HB,	L6018	SA
9.2-12-2	JC72-01197B	PMO-OPE KEY 1;CLP-510,ABS,G71312,-,-,HB,		SNA
9.2-12-5	JC72-01200A	PMO-OPE KEY 2 CAP;CLP-500,PMMA,MILKY WHI	K0248	SNA
9.2-12-6	JC92-01633A	PBA MAIN-CONT_BB_PLUS;CLP-510,SEC,KOREA,	M0406	SA
9.3 Cover Top				
9.3-0	JC97-01765A	MEA HOU-COVER TOP;CLP-500,SEC,EXPORT,-,-	Z2375	SA
9.3-1	JC72-01204A	PMO-COVER TOP;CLP-500,HIPS,IVORY,-,VE-18	Z2712	SA
9.3-2	6107-001220	SPRING-CS;SUS304WPB,HEAT TREATMEN,PI0.9,		SNA
9.3-3	JC72-01205A	PMO-COVER TOP BUTTON;CLP-500,HIPS,IVORY,	Z2713	SNA
9.3-5	JC72-01206A	PMO-COVER TOP OPENER;CLP-500,POM,WHITE,-	Z2717	SNA
9.3-6	JC72-01207A	PMO-COVER TOP STACKER;CLP-500,HIPS,IVORY	Z5039	SA
9.4 Cover Deve				
9.4-0	JC97-01766A	MEA HOU-COVER DEVE;CLP-500,SEC,EXPORT,-	T2119	SA
9.4-1	6107-001207	SPRING-TS;SWP,LEFT,PI1.4,D9.2,L6.5,-,-,I		SNA
9.4-1	6107-001203	SPRING-ES;SUS304-WPB,-,PI0.5,D4.5,L17.2,	S0088	SNA
9.4-2	JC70-00436A	IPR-COVER DEV LOCK BAR;CLP-500,SECC,-,T1	Z2325	SNA
9.4-3	JC68-01180A	LABEL(P)-DEVE COVER;CLP-500,-,YUPO PAPER	L0006	SNA
9.4-4	JC72-01081A	PMO-COVER DUP LOCKER F;CLP-500,POM,WHITE	L6026	SNA
9.4-5	JC72-01082A	PMO-COVER DUP LOCKER R;CLP-500,POM,WHITE	L6027	SNA
9.4-6	JC72-01213A	PMO-COVER DEVE;CLP-500,HIPS,IVORY,-,HR-1	T2151	SA
9.4-8	JC72-01215A	PMO-COVER DEV SPRING CAP;CLP-500,POM,WHI	Z4126	SA
9.4-11	6107-001198	SPRING-CS;SUS304-WPB,-,PI1,D11,L24,-,-,I	S0008	SNA
9.5 Exit Ass'y				
9.5-0	JC97-02039A	MEA-EXIT;CLP-510,SEC,EXPORT,-,-,-,-	E3212	SA
9.5-1	JC72-01099A	PMO-COVER EXIT;CLP-500,HIPS,LIGHT GRAY,-	Z2567	SA

SA : Service Available, **SNA** : Service not Available

Draw#	Part Code	Description	Location	SNA
9.5-2	JC72-01217A	PMO-C/EXIT LOCK COVER;CLP-500,HIPS,LIGHT	Z2507	SA
9.5-3	JC70-00440A	IPR-COVER EXIT BAR;CLP-500,SECC,-,T1.2,-	Z2328	SNA
9.5-4	JC72-01081A	PMO-COVER DUP LOCKER F;CLP-500,POM,WHITE	L6026	SNA
9.5-5	JC72-01082A	PMO-COVER DUP LOCKER R;CLP-500,POM,WHITE	L6027	SNA
9.5-6	6107-001223	SPRING-TS;SUS304 WPB,-,PI1.2,D9.9,L29,-,		SA
9.5-7	JC72-01098A	PMO-COVER EXIT GUIDE;CLP-500,HIPS,LIGHT	G2158	SNA
9.5-10	JC70-00372A	IPR-COVER EXIT HINGE;CLP-500,SECC,-,T1.2	H3030	SNA
9.5-11	JC97-02040A	MEA UNIT-EXIT FRAME;CLP-510,SEC,EXPORT,-		SNA
9.5-11-1	JC72-01103A	PMO-GUIDE EXIT UPPER;CLP-500,PC/ABS,IVOR	E4117	SNA
9.5-11-2	JC66-00607B	ROLLER-EXIT DRIVE;CLP-510,EPDM+SUM24L,¥Õ	E3213	SA
9.5-11-3	JC72-01345A	PMO-BUSHING DP;CLP-500,POM,WHT,ID5MM, OD		SNA
9.5-11-4	JC70-00374A	IPR-GROUND EXIT;CLP-500,SUS304-3/4H,-,T0	E4052	SNA
9.5-11-5	JC72-40978A	PMO-BEARING LARGE DP;ML-165,POM,BLACK,-,	B1041	SA
9.5-11-6	JC66-40912A	GEAR-DUPLEX;ML-165,POM,M1.0,Z16,-,WHITE,	D3021	SA
9.5-11-7	6044-000159	RING-C;ID3,OD7,T0.6,PASS,STSC	R0006	SA
9.5-11-8	JC66-40911A	GEAR-DP,IDLE;ML-165,POM,M1.0,Z21,-,WHITE	G0198	SA
9.5-11-9	6044-000001	RING-CS;ID3,OD3,T0.25,BLACK,SUS304	D4088	SNA
9.5-11-10	JC67-00065A	BRUSH-ANTISTATIC;CLP-500,SWT-805A+SUS 30	B0011	SNA
9.5-11-11	JC72-01233A	PMO-HOLDER GROUND BALL;CLP-500,PC,BLACK,	K3987	SA
9.5-11-12	JC72-01102A	PMO-GUIDE EXIT LOWER;CLP-500,PC/ABS,IVOR	E4110	SNA
9.5-11-13	JC72-41007A	PMO-ROLLER FD F;ML-165,POM,BLACK,-,-,-,-	K4063	SA
9.5-11-14	JC72-41008A	PMO-ROLLER FD R;ML-165,POM,BLACK,-,-,-,-	K4064	SA
9.5-11-15	JC61-00547A	HOLDER-EXIT(MC);SCX-5312F,PC,-,-,-,WHITE	H0013	SNA
9.5-11-16	JC61-00484A	SPRING ETC-EXIT LOWER IDLE;SCX-5100,SUS3	Z4180	SA
9.5-11-17	JC66-00608A	ROLLER-EXIT IDLE;CLP-500,TEFLON,PI10.5,L	R0010	SNA
9.5-11-18	JC72-20901A	PEX-ROLLER EXIT F_UP;ML-5000A,TEFLON,WHI	E4091	SA
9.5-11-19	JC70-00375A	IPR-GROUND EXIT PLATE;CLP-500,SUS304-3/4	P5050	SNA
9.5-11-20	JC97-01410A	MEA UNIT-TERMINAL:L;ML-5000A,SAMSUNG,KOR	K3637	SA
9.5-11-20-1	JC61-70930A	SPRING ETC-HV SMALL;ML-5000A,-,D4.5,-,L4	Z4198	SA
9.5-11-20-2	JC70-40912A	ICT-SHAFT HV LARGE;ML-5000A,SWCH18A,-,¥÷	S4027	SA
9.5-11-22	JC61-00974A	BRACKET-P-EXIT UPPER;CLP-510,SECC,T0.5,-		SNA
9.5-13	JC61-00850A	GUIDE-EXIT REAR;CLP-500,PC,T2.0,-,-,BLAC	G0007	SNA
9.6 Duplex Ass'y				
9.6-0	JC97-01756A	MEA-DUPLEX;CLP-500,SEC,EXPORT,-,-,-,-	D3027	SA
9.6-1	JC97-01758A	MEA HOU-COVER RIGHT;CLP-500,SEC,EXPORT,-	Z2374	SA
9.6-1-1-1	JC70-00361A	IPR-BRKT GUIDE A;CLP-500,SECC,-,T0.5,-,-	G2101	SNA
9.6-1-1-2	JC61-00841A	HOLDER-M-SAW;CLP-500,PC(NH-1023),-,-,-,B	H4034	SA
9.6-1-1-3	JC70-10232A	IPR-PLATE SAW;ML-80,SUS304 CSP 1/2H,-,T0	K3377	SA
9.6-1-1-4	JC72-01084A	PMO-FRAME DUPLEX;CLP-500,ABS,BLACK,-,HB,	D3033	SNA
9.6-1-1-5	JC72-01094A	PMO-PULLEY BELT;CLP-500,POM,WHITE,-,M90-	P7022	SNA
9.6-1-1-6	JC66-20901A	BELT-TIMMING;B32S2M280,CR+FG+NYLON,-,W3.	B2018	SA
9.6-1-1-7	JC66-00513A	GEAR-DUPLEX IDLER_Z25;CLP-500,POM,M0.8,Z	D3020	SA
9.6-1-1-8	JC72-01077A	PMO-COVER BELT;CLP-500,HIPS,BLACK,-,HB,-	Z2540	SNA
9.6-1-1-9	JC70-00367A	IPR-BRKT GROUND TR;CLP-500,C5210P,-,T0.3	K4291	SNA
9.6-1-1-10	6107-001202	SPRING-CS;SUS304,-,PI0.8,D6.9,L20,-,-,ID	S0090	SNA
9.6-1-1-11	JC66-00346A	GEAR-MP/DUP DRV;SCX-5100,POM,SW-01,M0.8,	G0340	SA
9.6-1-1-12	JC97-01761A	MEA UNIT-T2;CLP-500,SEC,EXPORT,-,-,-,-	K3629	SA
9.6-1-1-12-1	6044-000231	RING-E;ID5.0,OD11.0,T0.6,PASS,STS304		SA
9.6-1-1-12-2	JC66-00515A	GEAR-TRANSFER IDLER_Z47;CLP-500,POM,M0.8	G0447	SA
9.6-1-1-12-3	JC66-00619A	SHAFT-GUIDE TR;CLP-500,SUM22,L276,¥Õ6.0,S	S0019	NA
9.6-1-1-12-4	JC72-01087A	PMO-HOLDER TRANSFER;CLP-500,POM,BLACK,-,	K4004	SNA
9.6-1-1-12-5	JC72-01090A	PMO-LEVER TR FRONT;CLP-500,PC+GF20%,BLAC	L4079	SNA
9.6-1-1-12-6	JC72-01091A	PMO-LEVER TR REAR;CLP-500,PC+GF20%,BLACK	L4080	SNA
9.6-1-1-12-7	JC72-01092A	PMO-LINK TR FRONT;CLP-500,PC+GF20%,BLACK	K4041	SNA
9.6-1-1-12-8	JC72-01093A	PMO-LINK TR REAR;CLP-500,PC+GF20%,BLACK,	K4042	SNA

SA : Service Available, **SNA** : Service not Available

Draw#	Part Code	Description	Location	SNA
9.6-1-1-13	JC70-00368A	IPR-BRKT GROUND TR1;CLP-500,SUS304,-,T0.	K3276	SNA
9.6-1-1-14	JC72-00764A	PMO-SHAFT DUP DRIVER;SCX-5100,POM,BLACK,	S4079	SA
9.6-1-1-15	JC73-10203A	RPR-RUBBER EXIT;ML-80,EDPM RUBBER,-,-,-	E4164	SA
9.6-1-1-16	JG72-40744A	PMO-BUSHING TX(B4);CF5700,POM,NTR+WHT(DE		SA
9.6-1-1-17	JC72-40361A	PMO-ROLLER_EXIT;SCF(XR),POM,NATURAL,-,M9	R0015	SNA
9.6-1-1-18	JC61-70976A	SPRING ETC-FUSER EXIT;ML-7000,SUS304-WPB	S0021	SNA
9.6-1-1-19	JC70-00362A	IPR-BRKT GUIDE B;CLP-500,SUS304,-,T0.3,-	G2102	SNA
9.6-1-2	JC72-01078A	PMO-COVER DUPLEX;CLP-500,HIPS,LIGHT GRAY	D3031	SNA
9.6-1-3	JC70-00370A	IPR-COVER DUP LOCK SHAFT;CLP-500,SECC,-	S4050	SNA
9.6-1-4	JC72-01079A	PMO-COVER DUPLEX HANDLE;CLP-500,HIPS,LIG	D3029	SNA
9.6-1-6	JC72-01081A	PMO-COVER DUP LOCKER F;CLP-500,POM,WHITE	L6026	SNA
9.6-1-7	JC72-01082A	PMO-COVER DUP LOCKER R;CLP-500,POM,WHITE	L6027	SNA
9.6-1-8	JC72-01080A	PMO-COVER DUPLEX LINK;CLP-500,POM,WHITE,	D3030	SNA
9.6-1-9	JC63-00172A	COVER-DUPLEX LINK R;CLP-500,POM,-,-,-,-	D3014	SNA
9.6-1-10	JC72-01083A	PMO-COVER DUPLEX RAIL;CLP-500,PC/ABS,BLA	D3032	SNA
9.6-1-11	JC63-00173A	COVER-DUPLEX RAIL R;CLP-500,PC/ABS,-,-,-	D3015	SNA
9.6-1-12	6107-001194	SPRING-CS;SWP-B,BLK,PI0.9,D6.95,L20,-,-	S0032	SNA
9.6-1-13	JC97-01759A	MEA UNIT-TRAY MP;CLP-500,SEC,EXPORT,-,-	T4071	SA
9.6-1-13-1	JC72-01096A	PMO-TRAY CASE MP;CLP-500,HIPS,LIGHT GRAY	T4107	SNA
9.9.1-13-2	JC72-00857B	PMO-TRAY LINK MP;CLP-500,PC/ABS,LIGHT GR	T4121	SA
9.6-1-13-3	JB70-10906A	IPR-GUIDE LATCH;AMUNDSEN,STS C304-CSP-3/	G2113	SA
9.6-1-13-4	JC72-00777B	PMO-TRAY COVER MP;CLP-500,HIPS,LIGHT GRA	T4108	SA
9.6-1-13-5	JC72-00547H	PMO-SIDE GUIDE MP;CLP-500,ABS,LIGHT GRAY	G2300	SA
9.6-1-13-6	JC72-00778B	PMO-TRAY EXIT MP;CLP-500,HIPS,LIGHT GRAY	T4113	SA
9.6-1-13-7	JC68-00697A	LABEL(R)-HEIGHT,MP;SCX-5312F,-,PC,T0.5,W	L0008	SNA
9.6-1-1-20	JC70-00369A	IPR-BRKT GUIDE DUPLEX;CLP-500,SECC,-,T0.	G2103	SNA
9.6-1-1-21	JC70-00364A	IPR-BRKT GROUND B;CLP-500,SUS304,-,T0.2,	K4288	SNA
9.6-1-1-22	JC70-00363A	IPR-BRKT GROUND A;CLP-500,SUS304,-,T0.2,	K4287	SNA
9.6-1-1-23	JC70-00366A	IPR-BRKT GROUND D;CLP-500,C5210P,-,T0.3,	K4290	SNA
9.6-1-1-24	JC70-00365A	IPR-BRKT GROUND C;CLP-500,SUS304,-,T0.3,	K4289	SNA
9.6-1-1-25	JC39-00036A	CBF HARNESS-OPE GND;SF-5100,#18,UL 1007,	H1184	SA
9.6-1-1-26	JC72-00730A	PMO-BUSHING FEED;SCX-5100,POM,BLACK,-,-,	F6161	SA
9.6-1-1-27	JC72-01086A	PMO-GUIDE LOWER DUPLEX;CLP-500,ABS,BLACK	D3035	SNA
9.6-1-1-28	6044-000001	RING-CS;ID3,OD3,T0.25,BLACK,SUS304	D4088	SNA
9.6-1-1-29	JC72-01085A	PMO-GUIDE FEED;CLP-500,POM,BLACK,-,M90-4	F6175	SNA
9.6-1-1-30	6031-001051	WASHER-PLAIN;M4,ID4.1,OD7.0,T0.13,*,POLY	S2004	SNA
9.6-1-1-31	JC61-00866A	GUIDE-M-PAPER T2;CLP-500,PC+SUM24L,HB,-	G2072	SA
9.6-1-1-32	JC61-00485A	SPRING ETC-ACTUATOR6G;SCX-5100,SUS304-WP	Z4133	SA
9.6-2	JC96-03238A	MEA UNIT-T2;CLP-500,SEC,EXPORT,-,-,-,-	K3629	SA
9.7 Deve Drive Ass'y				
9.7-0	JC96-03237A	ELA UNIT-DE_DRIVE;CLP-510,SEC,EXPORT,-,-	T2073	SA
9.7-1	JC61-00972A	BRACKET-P-DEVE FRONT;CLP-510,SECC,T1.2,-		SNA
9.7-2	0205-001003	GREASE-BEARING;NYOGEL788,DAMPING GREASE,		SNA
9.7-3	JC66-00734A	GEAR-DEVE IDLE Z33;CLP-510,POM,M0.8,Z33,	G0012	SA
9.7-4	JC66-00735A	GEAR-DEVE IDLE Z53;CLP-510,POM,M0.8,Z53,	G0013	SA
9.7-5	JC66-00733A	GEAR-DEVE IDLE Z41;CLP-510,POM,M0.8,Z41,	G0011	SA
9.7-6	JC66-00473B	GEAR-M-DEVE IDEL Z51;CLP-500,POM,DE8903,	G0563	SA
9.7-7	JC66-00469A	GEAR-ITB CLEAN RDCN;CLP-500,POM,M90-44,M	G0306	SA
9.7-8	JC66-00732A	GEAR-DEVE RDCN;CLP-510,POM,M0.5/0.8,Z82/	G0010	SA
9.7-9	6031-000023	WASHER-PLAIN;-,ID5.9,OD10.0,T0.5,BLK,POL		SNA
9.7-10	JC66-00739A	SHAFT-DEVE DRIVE;CLP-510,SUM24L,L60.3,D6		SNA
9.7-11	JC47-00006B	MEP-CLUTCH SPRING;-,CLP-510,4.0W,DC24V,0		SNA
9.7-12	JC61-00973A	BRACKET-P-DEVE REAR;CLP-510,SECC,T1.2,-,		SNA
9.7-13	6003-000301	SCREW-TAPTITE;BH,+,S,M4,L6,ZPC(YEL),SWRC		SNA
9.7-14	JC61-00699A	BUSH-D6/L4;CLP-500,BRONZE+ST,ID6.0,OD9.0	K2874	SA

SA : Service Available, **SNA** : Service not Available

Draw#	Part Code	Description	Location	SNA
9.7-15	6044-000125	RING-E;ID4,OD9,T0.6,PASS,STSC	T2001	SA
9.7-16	JC31-00021A	MOTOR DC-MAIN(BLDC);50M8432021,CLP-500,1	M0010	SA
9.7-17	6003-000301	SCREW-TAPTITE;BH,+,S,M4,L6,ZPC(YEL),SWRC		SNA
9.7-18	JB70-00168A	ICT-PIN ADF;SCX-1110F,STS303,D2.0,-,-,-	A2006	SA
9.7-19	JC66-00465A	GEAR-DEVE DRIVE 2_Z20;CLP-500,POM,DE8903	G0545	SA
9.7-20	6031-001255	WASHER-PLAIN;NYLON,CUTTING,ID5,OD9,T0.5,		SA
9.7-21	JF68-10532B	LABEL(P)-BAR CODE;CLP-500,-,YUPO PAPER,1		SNA
9.8 Main Drive Ass'y				
9.8-0	JC96-03236A	ELA UNIT-MAIN DRIVE;CLP-510,SEC,EXPORT,-	D4029	SA
9.8-1	JC31-00038A	MOTOR DC-MAIN(BLDC);50M843A020,CLP-510,1	M0011	SA
9.8-2	JC33-00008B	SOLENOID-DUPLEX;-,CLP-500,DC24V,38.4§Ù,3	S8014	SA
9.8-3	JC47-00007A	MEP-CLUTCH CAM SOLENOID;-,CLP-500,3.1W,D	C9046	SA
9.8-4	JC47-00008A	MEP-CLUTCH ELECTRIC FEED;-,CLP-500,4.0W,	C9047	SA
9.8-5	JC61-00984A	BUSH-M-D8 L5;CLP-510,POM,ID8.0,OD12.0,L5	B0010	SA
9.8-6	JC61-00699A	BUSH-D6/L4;CLP-500,BRONZE+ST,ID6.0,OD9.0	K2874	SA
9.8-7	JC61-70915A	SPRING ETC-SOLENOID DP;ML-165,SUS304-WPB	S8015	SA
9.8-8	JC66-00470A	GEAR-FEED DRIVE_Z37;CLP-500,POM,DE8903,M	F6074	SA
9.8-9	JC66-00471A	GEAR-FUSER DRIVE 1_Z47;CLP-500,POM,M90-4	D4037	SA
9.8-10	JC66-00472A	GEAR-FUSER DRIVE 2_Z30;CLP-500,POM,DEL 5	D4038	SA
9.8-11	JC66-00473A	GEAR-IDLE Z51;CLP-500,POM,DE8903,M0.8,Z5	G0284	SA
9.8-12	JC66-00474A	GEAR-IDLE Z53;CLP-500,POM,DE8903,M0.8,Z5	G0285	SA
9.8-13	JC66-00475A	GEAR-ITB DRIVE 1_Z90;CLP-500,POM,DEL 588	D4040	SA
9.8-14	JC66-00476A	GEAR-ITB DRIVE 2_Z30;CLP-500,POM,DE20028	D4041	SA
9.8-15	JC66-00477A	GEAR-OPC DRIVE 1_Z120;CLP-500,POM,DE2002	D4043	SA
9.8-16	JC66-00479A	GEAR-OPC RDCN_Z120/Z60;CLP-500,POM,M90-4	G0356	SA
9.8-17	JC66-00480A	GEAR-RDCN Z110/Z37;CLP-500,POM,M90-44,M0	G0402	SA
9.8-18	JC66-00481A	GEAR-RDCN Z62/Z48;CLP-500,POM,M90-44,M0.	G0403	SA
9.8-19	JC66-00482A	GEAR-SWING DRIVE;CLP-500,POM,M90-44,M0.8	D4050	SA
9.8-20	JC66-00483A	GEAR-T2 DRIVE_Z25;CLP-500,POM,M90-44,M0.	D4051	SA
9.8-21	JC66-00740A	SHAFT-FEED DRIVE;CLP-510,SUM24L,L62.0,D8		SNA
9.8-22	JC66-00547A	SHAFT-FUSER DRIVE;CLP-500,SUM24L,L62.8,D	S4099	SA
9.8-23	JC66-00549A	SHAFT-ITB DRIVE;CLP-500,SUM24L,L60.5,D8.	S4111	SA
9.8-24	JC66-00550A	SHAFT-OPC DRIVE;CLP-500,SUM24L,L51.8,D8.	S4122	SA
9.8-25	JC66-00551A	SHAFT-T2 CAM;CLP-500,SUM24L,L74.4,D8.0,-	S4137	SA
9.8-26	JC66-00741A	SHAFT-T2 DRIVE;CLP-510,SUM24L,L57.5,D8.0		SNA
9.8-27	JC66-40211B	GEAR-EXIT/U,ID;ML-1605,POM,M0.8,Z16,-,BL	E4045	SA
9.8-28	JC70-00341A	IPR-BRKT MAIN FRONT;CLP-500,SECC,-,T1.2,	K3281	SA
9.8-29	JC70-00344A	IPR-BRKT MAIN REAR;CLP-500,SECC,-,T1.2,-	K3282	SA
9.8-30	JC70-00346A	IPR-LINK SOLENOID;CLP-500,SECC,-,T1.6,-,	S8011	SA
9.8-31	JC72-01064A	PMO-HUB CLUTCH;CLP-500,POM,BLACK,-,DE890	C9067	SA
9.8-32	JC72-01232A	PMO-DUMMY CLUTCH;CLP-500,POM,WHITE,-,DEL	C9065	SA
9.8-33	6031-000023	WASHER-PLAIN;-,ID5.9,OD10.0,T0.5,BLK,POL		SNA
9.8-34	JG74-10541A	MPR-RING CHARGE;SF6000,POLYSLIDER,OD10,I	W3388	SA
9.8-35	6031-001255	WASHER-PLAIN;NYLON,CUTTING,ID5,OD9,T0.5,		SA
9.8-36	6044-000159	RING-C;ID3,OD7,T0.6,PASS,STSC	R0006	SA
9.8-37	6044-000231	RING-E;ID5.0,OD11.0,T0.6,PASS,STS304		SA
9.8-38	JB70-00168A	ICT-PIN ADF;SCX-1110F,STS303,D2.0,-,-,-	A2006	SA
9.8-40	JF68-10532B	LABEL(P)-BAR CODE;CLP-500,-,YUPO PAPER,1		SNA
9.9 Fuser Ass'y				
9.9-0	JC96-03239A	ELA UNIT-FUSER 230V;CLP-510,SEC,EXPORT,2	F1940	SA
9.9-1	JC66-00517A	ROLLER-PRESSURE;CLP-510,AL5052+SILICON,D		SNA
9.9-2	JC72-01058A	PMO-BEARING FUSER F;CLP-500,PPS,BLACK,T5	B0029	SNA
9.9-3	JC72-01059A	PMO-BEARING FUSER GEAR;CLP-500,PPS,BLACK	B0030	SNA
9.9-4	JC66-00510A	GEAR-FUSER_Z35;CLP-500,PPS,M1.0,Z35,-,OF	F4095	SA

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Draw#	Part Code	Description	Location	SNA
9.9-5	6107-001193	SPRING-CS;SUS304-WPB,YEL,PI1.1,D6.1,L19.	S0032	SNA
9.9-6	JC72-01061A	PMO-FUSER UPPER;CLP-500,PET+GF30%,BN9030	F0004	SNA
9.9-7	JC72-01062A	PMO-FUSER LOWER;CLP-500,PET+GF30%,BN9030	F0005	SNA
9.9-8	JC70-00355A	IPR-GROUND FUSER;MLC-500,SUS304 CSP 1/2H	G0037	SNA
9.9-9	JC71-00043A	NPR-ELECTRODE AC WIRE;-,CLP-500,C5210P,-	E0003	SNA
9.9-10	JC71-00047A	NPR-ELECTRODE GEAR;-,CLP-500,C5210P,T0.6	E0004	SNA
9.9-11	JC71-00048A	NPR-ELECTRODE M;-,CLP-500,C5210P,T0.6,-,	E0005	SNA
9.9-12	4712-000001	THERMOSTAT;125/250V,15/7.5A,150+-5C,0C,2	T0007	SA
9.9-13	JC71-00046A	NPR-ELECTRODE F;-,CLP-500,C5210P,T0.6,-,	E0006	SNA
9.9-14	JC71-00049A	NPR-ELECTRODE PR;-,CLP-500,C5210P,T0.6,-	E0007	SNA
9.9-15	JC71-00044A	NPR-ELECTRODE AC PLATE;-,CLP-500,C5210P,	E0008	SNA
9.9-16	JC72-01055A	PMO-COVER THERMOSTAT;CLP-500,PET+GF30%,B	C0058	SNA
9.9-17	JC72-01060A	PMO-COVER CLEANING;CLP-500,PET+GF30%,BN9	C0059	SNA
9.9-18	JC66-00608A	ROLLER-EXIT IDLE;CLP-500,TEFLON,PI10.5,L	R0010	SNA
9.9-19	JC72-20901A	PEX-ROLLER EXIT F_UP;ML-5000A,TEFLON,WHI	E4091	SA
9.9-20	JC72-01100A	PMO-GUIDE DP SIDE;CLP-500,PC,BLACK,-,HH1	G0038	SNA
9.9-21	JC71-00045A	NPR-ELECTRODE CONNECTOR;-,CLP-500,C5210P	C0060	SNA
9.9-22	4713-001176	LAMP-HALOGEN;230V,-,500W,-,-,-,10X295.3M	L0017	SA
9.9-23	4713-001175	LAMP-HALOGEN;230V,-,300W,-,-,-,10X293MM	L0015	SA
9.9-24	JC66-00742A	LEVER-M-ACTUATOR EXIT;CLP-510,PET+GF30%,		SNA
9.9-25	6107-001205	SPRING-TS;SUS304-WPB,-,PI0.45,D7.95,L9.3	S0033	SNA
9.9-26	JC72-01063A	PMO-GUIDE OUTPUT;CLP-500,PET+GF30%,BN903	G0039	SNA
9.9-27	1404-001310	THERMISTOR-NTC;3.161KOHM,-,4537K,0.3MW/C	T0008	SA
9.9-28	6021-001194	NUT-SQUARE;-,M3,PASS,SWCH+ZN COATING,SQU		SNA
9.9-29	JC68-00407A	LABEL(R)-HV FUSER;ML-6060,PVC,-,220V,-	L0018	SNA
9.9-30	JC72-01208A	PMO-GUIDE INPUT;CLP-500,PET+GF30%,BLACK,	G0040	SNA
9.9-31	JC75-00165A	MEC-DUMMY THERMISTOR;CLP-500,-,PPS+SUS30		SNA
9.9-33	JC72-01208A	PMO-GUIDE INPUT;CLP-500,PET+GF30%,BLACK,	G0040	SNA
9.10 Cassette Ass'y				
9.10-0	JC97-01753A	MEA-CASSETTE;CLP-500,-,KOREA,CASSETTE,-,	K3657	SA
9.10-1	JC72-01069A	PMO-FRAME CASSETTE;CLP-500,HIPS,LIGHT GR	C4024	SNA
9.10-2	JC72-01068A	PMO-COVER CASSETTE;CLP-500,ABS,LIGHT GRA	Z2546	SNA
9.10-3	JC72-01072A	PMO-GUIDE SIDE CST;CLP-500,HIPS,VIOLET B	K3926	SNA
9.10-4	JC72-01070A	PMO-GUIDE FRONT CST;CLP-500,HIPS,LIGHT G	K3898	SNA
9.10-5	JC72-01071A	PMO-GUIDE REAR;CLP-500,HIPS,VIOLET BLUE,	K3917	SNA
9.10-6	JC70-00357A	IPR-PLATE K/UP;CLP-500,SECC,-,T1.0,-,-,-	K3372	SA
9.10-7	JC70-00220A	IPR-FINGER;SCX-5100,SPCC,-,T1.2,-,-,-,-	F0003	SA
9.10-8	JC70-00358A	IPR-SPRING PLATE G/SIDE;CLP-500,SUS301,-	P5091	SA
9.10-9	JC70-00356A	IPR-GUIDE PLATE PAPER;CLP-500,SUS304,-,T	P5060	SA
9.10-10	6107-001200	SPRING-CS;SUS304-WPB,-,PI0.85,D21.85,L55	S0034	SNA
9.10-11	JG61-70531A	SPRING ETC-LOCKER,PLATE;SF6000,STS304WPB	Z4215	SA
9.10-12	JC72-01073A	PMO-LOCKER PLATE;CLP-500,POM,WHITE,-,M90	L6038	SA
9.10-13	JC73-10910A	RPR-PAD CST;ML-165,CORK,25.8*24.6,-,-,NT	K4243	SA
9.10-14	JC68-01174A	LABEL(P)-INSTRUCTION CST;CLP-500,-,YUPO		SNA
9.10-15	JC68-00516A	LABEL(R)-HEIGHT XEROX;ML-6060/XRX,-,ART	L0040	SNA
9.13 Main Frame				
9.13-0	JC97-02037A	MEA MAIN-FRAME;CLP-510,SEC,EXPORT,-,-,-,	F1941	SA
9.13-1	JC97-01834A	MEA UNIT-OPC TONER DUCT;CLP-500,SEC,EXPO	D1008	SA
9.13-1-1	JC96-02882A	ELA UNIT-TONER MOTOR;CLP-500,SEC,EXPORT,	M2107	SA
9.13-1-1-1	6044-000125	RING-E;ID4,OD9,T0.6,PASS,STSC	T2001	SA
9.13-1-1-2	JB31-00020B	MOTOR DC-WASTE TONER;HC385G,CLP-500,160M	T2141	SA
9.13-1-1-3	JC61-00808A	BRACKET-WASTER TONER MOTOR;CLP-500,SECC,	M2050	SNA
9.13-1-1-4	JC66-00653A	GEAR WORM-WHEEL IDLE;CLP-500,POM,M0.6,Z3	G0137	SA
9.13-1-1-5	JC66-00654A	GEAR WORM-WASTE TONER;CLP-500,POM,M0.6,Z	T2098	SA

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Draw#	Part Code	Description	Location	SNA
9.13-1-2	6031-000023	WASHER-PLAIN;-,ID5.9,OD10.0,T0.5,BLK,POL		SNA
9.13-1-3	JC61-00699A	BUSH-D6/L4;CLP-500,BRONZE+ST,ID6.0,OD9.0	K2874	SA
9.13-1-4	JC61-00810A	PLATE-VIBRATOR INLET;CLP-500,SUS304 1/2H	P5159	SNA
9.13-1-5	JC61-00820A	BASE-M-WASTE TONER;CLP-500,PC/ABS,-,-,-	T2015	SNA
9.13-1-6	JC62-00129A	PIPE-WASTE BAR;CLP-500,SILICON,ID1.0,OD5	W1003	SA
9.13-1-7	JC66-00649A	CAM-M-WASTE DUCT OUTLET;CLP-500,POM,-,-	D1001	SA
9.13-1-8	JC66-00651A	GEAR WORM-WHEEL Z35;CLP-500,POM,M0.6,Z33	G0137	SA
9.13-1-9	JC66-00652A	SHAFT-M-WASTE DUCT INLET;CLP-500,POM,-	D1011	SA
9.13-1-10	JC67-00052A	DUCT-M-WASTE LIFTER;CLP-500,HIPS,-,-,-,B	D1002	SA
9.13-1-11	JC67-00053A	DUCT-M-WASTE TONER INLET1;CLP-500,HIPS,-	D1003	SA
9.13-1-12	JC67-00054A	DUCT-M-WASTE TONER INLET2;CLP-500,PC/ABS	D1004	SA
9.13-1-13	JC72-01186A	PMO-PIPE WASTE TRANSFER;CLP-500,HDPE,TRP	W1006	SNA
9.13-1-14	JC72-01278A	SPONGE-WASTE LIFTER 1;CLP-500,PE FORM+PE	Z3020	SA
9.13-1-15	JC72-01279A	SPONGE-WASTE LIFTER 2;CLP-500,PE FORM+PE	Z3021	SA
9.13-1-16	JC72-01285A	SPONGE-WASTE DUCT OPC;CLP-500,PE FOAM,-,	D1012	SA
9.13-1-17	JC72-01290A	SPONGE-WASTE COVER;CLP-500,PE FOAM+PET F	Z3019	SA
9.13-1-18	6044-000125	RING-E;ID4,OD9,T0.6,PASS,STSC	T2001	SA
9.13-1-19	6107-001201	SPRING-CS;SWRS-82A,-,W0.8*H0.8,D7.4,L280	S0047	SNA
9.13-1-20	6107-001199	SPRING-CS;SUS304-WPB,-,PI0.32,D3.95,L27,	S0048	SNA
9.13-1-21	JC39-00299A	CBF HARNESS-WASTE_MOTOR;CLP-500,WIRE HAR	M2056	SA
9.13-3	JC97-01810B	MEA UNIT-LSU GUIDE BRKT;CLP-510,SEC,EXPO		SNA
9.13-3-4	JC70-00428A	IPR-PLATE OPC OEM;CLP-500,SUS304 1/2H,-,	O0023	SNA
9.13-3-1	JC70-00388A	IPR-BRKT LSU;CLP-500,SECC,-,T1.6,-,-,-,-	L7020	SNA
9.13-3-2	JC72-01169A	PMO-LSU BASE;CLP-500,HIPS,BLACK,-,HR-136	L7037	SNA
9.13-3-3	JC70-00444A	IPR-GROUND LSU;CLP-500,SUS304-1/2H,-,T0.	L7022	SNA
9.13-3-5	JC75-00049A	MEC-TERMINAL;SF-5100,SAMSUNG,IVR	K3739	SA
9.13-3-6	JC72-01146A	PMO-COVER OEM UPPER;CLP-500,HIPS,BLACK,-	Z2643	SNA
9.13-3-7	JC39-00229A	CBF HARNESS-OPC_FUSE;SCX-5312F,WIRE HARN	H0023	SA
9.13-5	JC97-02038A	MEA UNIT-BRKT HVPS;CLP-510,SEC,EXPORT,-,		SNA
9.13-5-1	JC61-00975A	GUIDE-M-HVPS BOARD;CLP-510,HIPS,HB,-,-,-		SNA
9.13-5-2	JC70-00386A	IPR-BRKT HVPS LOWER;CLP-500,SECC,-,T1.0,	S7029	SNA
9.13-5-3	6502-000132	CABLE CLAMP;DAWS-1NE,ID11,L21.0,NTR,NYLO	C0069	SA
9.13-5-4	6502-000121	CABLE CLAMP;DAMC-101,D7~8,L19,SCP-1,NTR	C0071	SNA
9.13-5-5	JC63-00234A	SHEET-HVPS;MLC-500,PC,T=0.5,W136,L250,-,	S0005	SNA
9.13-6	JC96-02797A	ELA UNIT-GUIDE PAPER T2;CLP-500,SEC,EXPO	K3128	SA
9.13-7	JC96-02795A	ELA UNIT-DUMMY FUSER BASE;CLP-500,SEC,EX	D2014	SA
9.13-8	JC96-03216A	ELA UNIT-ITB CAM;CLP-510,SEC,EXPORT,ITB	I2131	SA
9.13-9	JC96-02881A	ELA UNIT-FRAME BASE;CLP-510,SEC,EXPORT,-	B0075	SA
9.13-10	JC96-03215A	ELA UNIT-FRAME REAR;CLP-510,SEC,EXPORT,-	F8823	SA
9.13-11	JC96-03214A	ELA UNIT-FRAME FRONT;CLP-510,SEC,EXPORT,	F8822	SA
9.13-13	JC70-00447A	IPR-SHUTTER TORTION;CLP-500,SUS304-H,-,T	S6004	SNA
9.13-14	6044-000001	RING-CS;ID3,OD3,T0.25,BLACK,SUS304	D4088	SNA
9.13-16	JC72-01284A	SPONGE-DUST OPC COVER;CLP-500,PE FOAM,-,	O0060	SA
9.13-17	JC97-01814A	MEA UNIT-OPC TONER HOUSING;CLP-500,SEC,E	H6050	SA
9.13-17-1	JC61-00885A	PLATE-P-VIBRATOR OUTLET;CLP-500,SUS304-H		SNA
9.13-17-2	JC61-00812A	BUSH-M-WASTE CAM;CLP-500,POM,-,-,-,WHITE	W1000	SA
9.13-17-3	JC72-01222A	PMO-CAP SHUTTER ITB;CLP-500,HIPS,BLACK,-	S6006	SNA
9.13-17-4	JC72-01228A	PMO-HOUSING TRANSFER;CLP-500,HIPS,BLACK,	H6087	SNA
9.13-17-5	JC72-01230A	PMO-SHUTTER TRANSFER OPC;CLP-500,HIPS,BL	O0051	SNA
9.13-17-6	JC72-01289A	SPONGE-TANK TONER;CLP-500,PE FOAM,-,T3.0	S0053	SNA
9.13-17-8	JC72-01294A	SPONGE-DUCT TONER OPC;CLP-500,PE FOAM+PE	D0016	SNA
9.13-17-9	JC72-01295A	SPONGE-TANK TONER OPC;CLP-500,PE FOAM+PE	S0055	SNA
9.13-18	JB61-70922A	SPRING ETC-CLUTCH;MJC-810L,SUS304,-,ID4.		SA
9.13-20	JC96-03244A	ELA UNIT-DEVE BOARD;CLP-510,-,EXPORT,DEV	P2136	SA
9.13-21	JC39-00276A	CBF HARNESS-MAIN FSR_ROLL;CLP-500,WIRE H	H1126	SA
9.13-22	JC39-00398A	CBF HARNESS-PANEL;CLP-600,WIRE HARNESS,U	H2133	SA

SA : Service Available, **SNA** : Service not Available

Draw#	Part Code	Description	Location	SNA
9.13-23	JC63-00165A	GROUND-FUSER FRAME;CLP-500,SUS304CSP,T0.	F2125	SNA
9.13-24	JC63-00247A	SHEET-ERASER LAMP;CLP-500,PC,T0.5,W220.5	L1033	SA
9.13-25	JC66-00334A	GEAR-GEAR FUSER DRV OUTER;SCX-5100,POM,M	F4097	SA
9.13-26	JC66-40911A	GEAR-DP,IDLE;ML-165,POM,M1.0,Z21,-,WHITE	G0198	SA
9.13-27	JC66-40964A	GEAR-EXIT,IDLE(Z17);ML-5000,NYLON66,M1.0	E4040	SA
9.13-28	JC61-00984A	BUSH-M-D8 L5;CLP-510,POM,ID8.0,OD12.0,L5	B0010	SA
9.13-29	JC72-01141A	PMO-COVER FUSER BASE;CLP-500,PBT+GF30%,B	Z2608	SNA
9.13-30	JC72-01145A	PMO-COVER HARNESS FUSER;CLP-500,HIPS,BLA	H1327	SNA
9.13-31	JC72-01171A	PMO-LSU SHUTTER COVER;CLP-500,PP,BLACK,-	L7038	SNA
9.13-32	JC97-02138A	MEA UNIT-TERMINAL S;CLP-510,SEC,EXPORT,S	T2333	SA
9.13-33	JC63-00360A	SHEET-TONER COVER;CLP-500,PVC,T0.1,W65,L		SNA
9.13-34	JC72-01216A	PMO-HOLDER GUIDE EXIT UP;CLP-500,POM,BLA	G2268	SA
9.13-35	JC47-00007B	MEP-CLUTCH CAM SOLENOID;-,CLP-500,3.1W,D	C2222	SA
9.13-36	JC72-01216A	PMO-HOLDER GUIDE EXIT UP;CLP-500,POM,BLA	G2268	SA
9.14 Front Frame				
9.14-0	JC96-03214A	ELA UNIT-FRAME FRONT;CLP-510,SEC,EXPORT,	F8822	SA
9.14-1	JC96-03234A	ELA UNIT-TONER SENSOR;CLP-510,SEC,EXPORT		SNA
9.14-1-1	6044-000001	RING-CS;ID3,OD3,T0.25,BLACK,SUS304	D4088	SNA
9.14-1-2	JC61-00813A	HOLDER-M-WASTE TONER SENSOR;CLP-500,HIPS	H4038	SA
9.14-1-3	JC72-01189A	PMO-TONER DETACTER;CLP-500,HIPS,BLACK,-,	T2162	SA
9.14-1-4	JC92-01637A	PBA SUB-EXIT_WASTE;CLP-510,SEC,KOREA,WAS	W2121	SA
9.14-2	JC97-01812A	MEA UNIT-ITB LIFTER;CLP-500,SEC,EXPORT,-	K3579	SA
9.14-2-1	JC72-01282A	SPONGE-DUCT TONER ITB LIFT;CLP-500,PE FO	L0028	SNA
9.14-2-2	JC67-00043A	DUCT-TONER ITB LIFTER;CLP-500,HIPS,-,-,-	D1005	SNA
9.14-2-3	JC72-01286A	SPONGE-ITB DUCT;CLP-500,PE FOAM,-,T1.0,W	D0015	SNA
9.14-3	JC97-01813A	MEA UNIT-ITB TONER HOUSING;CLP-500,SEC,E	H6049	SA
9.14-4	6044-000001	RING-CS;ID3,OD3,T0.25,BLACK,SUS304	D4088	SNA
9.14-6	JC61-00709A	PLATE-GUIDE T2 FRONT;CLP-500,SECC,T1.0,-	P5141	SNA
9.14-7	JC61-00756A	BRACKET-DUMMY LSU F;CLP-500,SECC,T1.2,-,	L7001	SNA
9.14-3-1	JC61-00814A	HOUSING-M-WASTE TONER ITB;CLP-500,HIPS,H	H6037	SA
9.14-3-2	JC72-01294A	SPONGE-DUCT TONER OPC;CLP-500,PE FOAM+PE	D0016	SNA
9.14-3-3	JC72-01222A	PMO-CAP SHUTTER ITB;CLP-500,HIPS,BLACK,-	S6006	SNA
9.14-3-4	JC72-01229A	PMO-SHUTTER TRANSFER ITB;CLP-500,HIPS,BL	S6009	SNA
9.14-3-5	JC72-01287A	SPONGE-ITB TANK DUST;CLP-500,PE FOAM+PET	S0060	SNA
9.14-3-6	JC72-01288A	SPONGE-ITB TANK TONER;CLP-500,PE FOAM+PE	S0061	SNA
9.14-3-7	JC72-01292A	SPONGE-CAP SHUTTER;CLP-500,PE FOAM,-,T2.	S0054	SNA
9.14-3-7	JC72-01292A	SPONGE-CAP SHUTTER;CLP-500,PE FOAM,-,T2.	S0054	SNA
9.14-8	JC97-02138A	MEA UNIT-TERMINAL S;CLP-510,SEC,EXPORT,S	T2333	SA
9.14-9	JC63-00166A	GROUND-HVPS LSU;CLP-500,SUS304 1/2H,T0.2	L7016	SNA
9.14-10	JC66-00562A	LINK-LOCK OPC F;CLP-500,POM,M90-44,-,-,-	O0028	SNA
9.14-11	JC66-00666A	LEVER-ITB LOCK FRONT;CLP-500,PC/ABS,T3.0	L4032	SA
9.14-12	JC68-01149B	LABEL(R)-COLOR BAR;CLP-510,SEC,PVC,T0.12		SNA
9.14-13	JC39-00114A	CBF HARNESS-BRUSH GND;ML-7050,-,UL1007,-	H1037	SA
9.14-14	JC70-00385A	IPR-BRKT GUIDE HVPS R;CLP-500,SECC,-,T1.	G2105	SNA
9.14-15	JC70-00406A	IPR-BRKT EXIT HINGE F;CLP-500,SECC,-,T1.	H3023	SNA
9.14-16	JC70-00419A	IPR-ITB HINGE GROUND;CLP-500,SUS304 1/2H	H3033	SNA
9.14-17	JC70-00420A	IPR-ITB GUIDE TORSION;CLP-500,SUS304 H,-	G2128	SNA
9.14-18	JC70-00421A	IPR-OPC GUIDE TORSION;CLP-500,SUS304 1/2	G2129	SNA
9.14-19	JC70-00422A	IPR-OPC/ITB GROUND;CLP-500,SUS304 1/2H,-	K3364	SNA
9.14-21	JC70-00424A	IPR-OPC/LSU GROUND;CLP-500,SUS304 1/2H,-	L7023	SNA
9.14-22	JC70-00447A	IPR-SHUTTER TORTION;CLP-500,SUS304-H,-,T	S6004	SNA
9.14-23	JC72-01144A	PMO-FRAME FRONT;CLP-500,ABS+GF20%,BLACK,	F2227	SNA
9.14-24	JC72-01173A	PMO-COVER TOP LEVER IN;CLP-500,PC+GF20%,	L4043	SNA
9.14-25	JC72-01174A	PMO-COVER TOP LEVER OUT;CLP-500,PC+GF20%	L4044	SNA
9.14-26	JC72-01177A	PMO-DEVE OPEN PLATE;CLP-500,HIPS,BLACK,-	O1079	SNA

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Draw#	Part Code	Description	Location	SNA
9.14-27	JC72-01178A	PMO-DEV OPEN PLATE GUIDE;CLP-500,HIPS,BL	G2166	SNA
9.14-28	6107-001196	SPRING-CS;SUS304-WPB,-,PI0.85,D5.65,L21.	S0063	SA
9.14-29	JC72-01184A	PMO-LOCK ITB FRONT;CLP-500,POM,BLACK,-,M	K4044	SNA
9.14-30	JC72-01185A	PMO-LOCK COVER FRONT;CLP-500,HIPS,BLACK,	Z2790	SNA
9.14-31	JC72-01221A	PMO-RACK OPC;CLP-500,POM,BLACK,-,M90-44,	O0046	SNA
9.14-32	6107-001199	SPRING-CS;SUS304-WPB,-,PI0.32,D3.95,L27,	S0048	SNA
9.14-33	JC72-01225A	PMO-GUIDE LOCK OPE F;CLP-500,PC ,BLACK,-	O1083	SNA
9.14-34	JC72-01283A	SPONGE-DUST ITB COVER;CLP-500,PE FOAM,-,	Z3017	SA
9.14-36	JC92-01631A	PBA SUB-OEM_BB_PLUS;CLP-510,SEC,KOREA,OE	P2133	SA
9.14-37	6107-001214	SPRING-ES;SWP(PW-2),BLACK,PI0.45,D5.35,L	S0065	SA
9.15 Rear Frame				
9.15-0	JC96-03215A	ELA UNIT-FRAME REAR;CLP-510,SEC,EXPORT,-	F8823	SA
9.15-1	6044-000001	RING-CS;ID3,OD3,T0.25,BLACK,SUS304	D4088	SNA
9.15-2	JC39-00264A	CBF HARNESS-HVPS_CHARGE;CLP-500,WIRE HAR	H1099	SA
9.15-3	JC39-00265A	CBF HARNESS-HVPS_T1;CLP-500,WIRE HARNESS	H1101	SA
9.15-4	JC39-00266A	CBF HARNESS-HVPS_T2;CLP-500,WIRE HARNESS	H1102	SA
9.15-5	JC97-01829A	MEA UNIT-FEED;CLP-500,SEC,EXPORT,-,-,-,-	F6112	SA
9.15-6	JC61-00707A	PLATE-S/W DUPLEX;CLP-500,SUS304 1/2H,T0.	P5156	SNA
9.15-7	JC61-00708A	PLATE-GUIDE T2 REAR;CLP-500,SECC,T1.0,-,	P5142	SNA
9.15-8	JC63-00162A	GROUND-MAIN ITB DEVE;CLP-500,SUS304 H,T0	T2110	SNA
9.15-9	JC63-00163A	GROUND-LSU DEVE DRIVE;CLP-500,SUS304 H,T	L7018	SNA
9.15-10	JC63-00181A	GROUND-HVPS LSU LOWER;CLP-500,C5210P-1/2	L7017	SNA
9.15-11	JC63-00208A	GROUND-EXIT DRIVE;CLP-500,SUS304-1/2H,T0	D4052	SNA
9.15-12	JC66-00343A	GEAR-RDCN FEED OUTER;SCX-5100,POM,M90-44	F6086	SA
9.15-13	JC66-00484A	GEAR-T2 IDEL_Z27;CLP-500,POM,DE8903,M0.8	G0432	SA
9.15-14	JC66-00485A	GEAR-T2 RDCN_Z32/Z23;CLP-500,POM,M90-44,	G0433	SA
9.15-15	JC66-00667A	LEVER-ITB LOCK REAR;CLP-500,PC/ABS,T3.0,	L4033	SA
9.15-16	JC70-00381A	IPR-BRKT DUMMY LSU R;MLC-500,SECC,-,T1.6	L7019	SNA
9.15-17	JC70-00384A	IPR-BRKT GUIDE HVPS F;CLP-500,SECC,-,T1.	G2104	SNA
9.15-18	JC70-00387A	IPR-BRKT LOCK ITB;CLP-500,SECC,-,T1.6,-,	K3280	SNA
9.15-19	JC70-00407A	IPR-BRKT EXIT HINGE R;CLP-500,SECC,-,T1.	H3024	SNA
9.15-20	JC70-00425A	IPR-PLATE FUSER;CLP-500,SUS304 1/2H,-,T0	F4107	SNA
9.15-22	JC70-00427A	IPR-PLATE OPC HV;CLP-500,SUS304 1/2H,-,T	O0022	SNA
9.15-23	JC70-00431A	IPR-PLATE T1;CLP-500,SUS304 1/2H,-,T0.4,	K3379	SNA
9.15-24	JC70-00432A	IPR-PLATE T2;CLP-500,SUS304 1/2H,-,T0.4,	K3380	SNA
9.15-25	JC70-00443A	IPR-GROUND HVPS;CLP-500,C5210P-1/2H,-,T0	S7032	SNA
9.15-26	JC70-00445A	IPR-GROUND MAIN;CLP-500,SUS304-1/2H,-,T0	K3328	SNA
9.15-27	JC72-01143A	PMO-FRAME REAR;CLP-500,ABS+GF20%,BLACK,-	F2254	SNA
9.15-28	JC72-01148A	PMO-COVER T1 HV;CLP-500,HIPS,BLACK,-,HR-	Z2710	SNA
9.15-29	JC72-01149A	PMO-COVER T2 HV;CLP-500,HIPS,BLACK,-,HR-	Z2711	SNA
9.15-30	JC72-01157A	PMO-GUIDE LOCK OPC;CLP-500,PC+GF20%,BLAC	O0043	SNA
9.15-31	JC72-01158A	PMO-LINK LOCK OPC;CLP-500,POM,BLACK,-,M9	O0045	SNA
9.15-32	JC72-01168A	PMO-LOCK ITB;CLP-500,POM,BLACK,-,M90-44,	K4045	SNA
9.15-33	JC70-00446A	IPR-GROUND PAPER GUIDE;CLP-500,SUS304-1/	G2110	SNA
9.15-34	JC75-00049A	MEC-TERMINAL;SF-5100,SAMSUNG,IVR	K3739	SA
9.15-35	JC39-00302A	CBF HARNESS-100M_GND;CLP-500,-,-,1 PIN,5	H1015	SA
9.15-36	JC96-02876A	ELA UNIT-COVER OPEN SENSOR;CLP-500,SEC,E	Z2296	SA
9.15-36A	JC61-00706A	PLATE-S/W DEVE;CLP-500,SUS304 1/2H,T0.2,	P5155	SNA
9.15-36B	JC70-00413A	IPR-BRKT DEVE OPEN;CLP-500,SECC,-,T1.2,-	O1045	SNA
9.15-37	6107-001214	SPRING-ES;SWP(PW-2),BLACK,PI0.45,D5.35,L	S0065	SA
9.15-38	6107-001196	SPRING-CS;SUS304-WPB,-,PI0.85,D5.65,L21.	S0063	SA
9.16 Base Frame				
9.16-0	JC96-02881A	ELA UNIT-FRAME BASE;CLP-500,SEC,EXPORT,-	B0075	SA
9.16-1	JC96-02774A	ELA UNIT-MP;CLP-500,SEC,EXPORT,-,-,-,-	K3155	SA

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Draw#	Part Code	Description	Location	SNA
9.16-2	JC97-01755A	MEA-PICKUP;CLP-500,SEC,EXPORT,-,-,-,-	P2104	SA
9.16-3	JC39-00082A	CBF HARNESS-SCF;ML-6060,WIRE HARNESS,UL1	H1227	SA
9.16-4	JC39-00280A	CBF HARNESS-SMPS_INLET;CLP-500,WIRE HARN	H1252	SA
9.16-5	JC61-00710A	PLATE-GUIDE RAIL;CLP-500,SUS304 1/2H,T0.	P5140	SNA
9.16-6	JC61-40001A	FOOT-ML80;ML-80,NBR,-,GRAY,-,-,-	F1013	SA
9.16-7	JC63-00167A	GROUND-SCF;CLP-500,SECC,T0.8,-,-,-,-	S1039	SNA
9.16-8	JC63-00175A	COVER-SCREW LOCKING MP;CLP-500,POM,-,-,-	S2019	SNA
9.16-9	JC63-00207A	COVER-M-BASE BAR;CLP-500,HIPS,-,-,-,HB,-	Z2178	SA
9.16-10	JC66-00050A	CAM-CATCH;ML-9400W,POM,-,34¡¿18¡¿7,WHITE S	K2892	SA
9.16-11	JC66-00335A	GEAR-PICK_UP;SCX-5100,POM,M0.8,Z47,-,NTR	P2056	SA
9.16-12	JC70-00379A	IPR-BRKT BASE BAR;CLP-500,SECC,-,T1.6,-,	B0083	SA
9.16-13	JC70-00390A	IPR-CHANNEL FRAME BASE;CLP-500,SECC,-,T1	B0086	SA
9.16-14	JC70-00404A	IPR-BRKT DEVE HINGE F;CLP-500,SECC,-,T1.	H3021	SA
9.16-15	JC70-00405A	IPR-BRKT DEVE HINGE R;CLP-500,SECC,-,T1.	H3022	SA
9.16-16	JC70-00414A	IPR-BRKT POWER;CLP-500,SECC,-,T1.2,-,-,-	K3287	SNA
9.16-17	JC72-00836A	PPR-SHEET/GUIDE PAPER;SCX-5100,PC SHEET,	S5048	SA
9.16-18	JC72-01156A	PMO-FRAME BASE;CLP-500,HIPS,L/GRAY,G7131	B0145	SA
9.16-19	JC72-01161A	PMO-GUIDE SCT PAPER;CLP-500,HIPS,IVORY,-	K3924	SA
9.16-20	JC72-01172A	PMO-PAPER GUIDE;CLP-500,HIPS,IVORY,-,HR-	G2279	SNA
9.16-21	JC72-41191A	PMO-BEARING SHAFT;ML-6000,POM,BLACK,-,DE	S4068	SA
9.16-22	JC33-00007B	SOLENOID-PICK UP;-,CLP-500,DC24V,80.0§Ù,	P2163	SA
9.16-23	JC92-01535A	PBA SUB-TEMP;CLP-500,SEC,-,TEMP,-,-,-,-,	M0429	SA
9.16-24	6031-001255	WASHER-PLAIN;NYLON,CUTTING,ID5,OD9,T0.5,		SA
9.16-25	JB39-00103A	CBF HARNESS-LIU GND;SCX-1110F,WIRE,UL100	L5004	SA
9.16-26	6031-000120	WASHER-E.T;M4,ID4.3,OD8.5,T0.45,ZPC(YEL)		SNA
9.17 MP Ass'y				
9.17-0	JC96-02774A	ELA UNIT-MP;CLP-500,SEC,EXPORT,-,-,-,-	K3155	SA
9.17-1	6044-000125	RING-E;ID4,OD9,T0.6,PASS,STSC	T2001	SA
9.17-2	JC33-00006B	SOLENOID-MP;-,CLP-500,DC24V,82.0§Ù,27.8*	S8014	SA
9.17-3	JC61-00003A	SPRING ETC--CAM MP;ML-6100,SUS304-WPB,0.	Z4145	SA
9.17-4	JC61-00482A	SPRING ETC-PICKUP;SCX-5100,SUS304-WPB,PI	P2913	SA
9.17-5	JC61-00483A	SPRING ETC-KNOCKUP,MP;SCX-5100,SUS304-WP	Z4206	SA
9.17-6	JC70-00237A	IPR-BRACKET SOLENOIDE;SCX-5100,SECC,-,1.	S8009	SA
9.17-7	JC72-00055A	PMO-HOLDER CAM MPF;ML-6100,POM,WHT,-,-	K3984	SNA
9.17-8	JC72-00761A	PMO-ROLLER CAM.MP;SCX-5100,POM,WHITE,-,-	K4061	SA
9.17-9	JC72-00767A	PMO-ACTUATOR,MP;SCX-5100,PC,BLACK,-,-,-,	K3818	SA
9.17-10	JC72-00768A	PMO-ADJUSTER,MP;SCX-5100,POM,BLACK,-,-,-	A3001	SA
9.17-11	JC72-00769A	PMO-CAM PICK UP,MP;SCX-5100,PC,BLACK,-,-	P2124	SA
9.17-12	JC72-00770A	PMO-FRAME,MP;SCX-5100,PC/ABS,C8723,-,-,H	F2243	SA
9.17-13	JC72-00771A	PMO-HOLDER PAD,MP;SCX-5100,PC/ABS,BLACK,	P0029	SA
9.17-14	JC72-00772A	PMO-HOLDER SENSOR,MP;SCX-5100,ABS,BLACK,	S3083	SA
9.17-15	JC72-00773A	PMO-HOUSING PICK UP,MP;SCX-5100,POM,BLAC	P2129	SA
9.17-16	JC72-00775A	PMO-PLATE KNOCK UP,MP;SCX-5100,ABS+GF20%	K5007	SA
9.17-17	JC72-41027A	PMO-IDLE PICK UP MP;ML-165,POM,BLK,-,-,-	P2131	SA
9.17-18	JC72-41364A	PMO-BUSHING_P/U,MP;ML-6100,POM,BLACK,-,C	K3855	SA
9.17-19	JC73-00089A	RPR-RUBBER PICK UP,MP;SCX-5100,EPDM,-,-,	P2147	SA
9.17-20	JC69-00494A	PAD-MP(PLUS);SCX-5315F,URETHANE,0.9T,31,	M0005	SA
9.17-22	JC92-01500A	PBA SUB-MP_EMPTY SENSOR;CLP-500,SEC,-,MP	M0396	SA
9.17-23	JC72-00056A	PMO-GEAR P/U MPF;ML-6100,POM,WHT,-,-	G0509	SA
9.17-24	JC63-00240A	SHEET-PAPER MP;CLP-500,PC,T=0.25,W15,L38	S5084	SA
9.18 Pick_Up Ass'y				
9.18-0	JC97-01755A	MEA-PICKUP;CLP-500,SEC,EXPORT,-,-,-,-	P2104	SA
9.18-1	JC61-00482A	SPRING ETC-PICKUP;SCX-5100,SUS304-WPB,PI	P2913	SA
9.18-2	JC70-00359A	IPR-GROUND FEED;CLP-500,C5210P,-,T0.2,-,	F6093	SA

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Draw#	Part Code	Description	Location	SNA
9.18-3	JC70-00360B	IPR-GUIDE-P-INPUT;CLP-510,SECC,-,T0.5,-		SNA
9.18-6	JC72-00719A	PMO-ACTUATOR EMPTY;SCX-5100,-,ABS,BLK,HB	K3816	SA
9.18-7	JC72-00729A	PMO-SHAFT PICK UP;SCX-5100,PC,BLACK,-,-	P2134	SA
9.18-8	JC72-01076A	PMO-GUIDE PAPER;CLP-500,HIPS,BLACK,-,HB,	K3913	SA
9.18-9	JC92-01453A	PBA SUB-P.EMPTY SENSOR;CLP-500,SEC,-,P.E	M0405	SA
9.18-10	JC72-41191A	PMO-BEARING SHAFT;ML-6000,POM,BLACK,-,DE	S4068	SA
9.18-11	JC72-41364A	PMO-BUSHING_P/U,MP;ML-6100,POM,BLACK,-,C	K3855	SA
9.18-12	JC73-00149A	RUBBER-PICK UP;CLP-500,EDPM,R20.0*W12,-	P2148	SA
9.19 Feeder Ass'y				
9.19-0	JC97-01829A	MEA UNIT-FEED;CLP-500,SEC,EXPORT,-,-,-,-	F6112	SA
9.19-1	JC97-01768A	MEA-HOLDER PINCH C3;CLP-500,SEC,EXPORT,-	P4004	SA
9.19-1-1	JC72-01107A	PMO-HOLDER PINCH C3;CLP-500,PC+GF20%,CP2	P4012	SNA
9.19-1-2	JC72-01108A	PMO-HOLDER PINCH C5;CLP-500,PC+GF20%,CP2	P4012	SNA
9.19-1-3	JC70-10230A	IPR-SHAFT FEED IDLER;ML-80,SUM24L,NI,-,-	F6099	SA
9.19-2	JC97-01769A	MEA-HOLDER PINCH C5;CLP-500,SEC,EXPORT,-	P4005	SA
9.19-2-1	JC72-01108A	PMO-HOLDER PINCH C5;CLP-500,PC+GF20%,CP2	P4012	SNA
9.19-2-2	JC72-40261A	PMO-ROLLER FEED L;ML-80,POM,WHT,-,-,-,-,	F6192	SA
9.19-2-3	JC70-10230A	IPR-SHAFT FEED IDLER;ML-80,SUM24L,NI,-,-	F6099	SA
9.19-3	JC97-01770A	MEA-HOLDER PINCH M;CLP-500,SEC,EXPORT,-,	P4006	SA
9.19-3-1	JC72-00724A	PMO-HOLDER PINCH M;SCX-5100,PC+GF20%,BLA	P4012	SA
9.19-3-2	JC72-40261A	PMO-ROLLER FEED L;ML-80,POM,WHT,-,-,-,-,	F6192	SA
9.19-3-3	JC72-40266A	PMO-SUB HOLDER FEED;ML-80,POM,BLK,-,-,-,	F6198	SA
9.19-3-4	JC72-40262A	PMO-ROLLER FEED S;ML-80,POM,NTR,-,-	F6194	SA
9.19-3-5	JC70-10230A	IPR-SHAFT FEED IDLER;ML-80,SUM24L,NI,-,-	F6099	SA
9.19-4	JC72-01106A	PMO-FRAME FEED;CLP-500,ABS+GF20%,GP2200,	F6171	SA
9.19-5	6044-000125	RING-E;ID4,OD9,T0.6,PASS,STSC	T2001	SA
9.19-6	JC72-01105A	PMO-BUSHING FEED MID;CLP-500,POM,WHITE,-	F6160	SNA
9.19-7	JC70-00376A	IPR-BRKT FEED MID;CLP-500,SECC,-,T0.8,-	F6091	SNA
9.19-8	6031-000021	WASHER-PLAIN;-,ID6.0,OD16.0,T0.5,BLK,POL	W0031	SNA
9.19-9	JC72-01113A	PMO-ROLLER FEED MID;CLP-500,POM/GF25%+UR	F6193	SA
9.19-10	JC66-00618A	SHAFT-FEED MID;CLP-500,SUM24L,L37,¥Õ6.0,S	S0078	NA
9.19-11	JC72-41364A	PMO-BUSHING_P/U,MP;ML-6100,POM,BLACK,-,C	K3855	SA
9.19-12	JC63-00182A	GROUND-PICKUP PLATE;CLP-500,SUS304-3/4H,	P2061	SNA
9.19-13	JC72-00727A	PMO-ROLLER FEED;SCX-5100,POM+URETAN,BLAC	F6195	SA
9.19-14	JC66-00617A	SHAFT-FEED;CLP-500,SUM24L,L67.1,¥Õ6.0,-	F6210	SA
9.19-15	JC66-00346A	GEAR-MP/DUP DRV;SCX-5100,POM,SW-01,M0.8,	G0340	SA
9.19-16	JC72-01110A	PMO-PULLEY FEED L;CLP-500,POM,WHITE,Z=61	F6185	SA
9.19-17	6602-001176	BELT-TIMING GEAR;30S2M250,-,T1.36,-,L250	B0055	SA
9.19-18	JC66-00332A	GEAR-FEED;SCX-5100,POM,M9044,M0.8,Z62/54	F6078	SA
9.19-19	JC72-01111A	PMO-PULLEY FEED S;CLP-500,POM,WHITE,Z=32	F6186	SA
9.19-20	JC72-01134A	PMO-BRKT FEED;CLP-500,PC/ABS+SUS430 1.5T	F6159	SA
9.19-21	JC72-01112A	PMO-PULLEY IDLE;CLP-500,POM,WHITE,PI=10,	P7026	SA
9.19-22	6044-000001	RING-CS;ID3,OD3,T0.25,BLACK,SUS304	D4088	SNA
9.19-23	6107-001210	SPRING-TS;SUS304-WPB,-,PI0.9,D6.3,-,-,-	S0080	SNA
9.19-24	6107-001211	SPRING-TS;SUS304-WPB,-,PI0.75,D6.25,-,-,	S0081	SNA
9.19-25	JC61-00481A	SPRING ETC-FEED MP;SCX-5100,SUS304-WPB,P	F6218	SA
9.20 Guide Paper T2 Ass'y				
9.20-0	JC96-02797A	ELA UNIT-GUIDE PAPER T2;CLP-500,SEC,EXPO	K3128	SA
9.20-1	JC72-01139A	PMO-COVER FEED SENSOR;CLP-500,PC,BLACK,-	F6165	SA
9.20-2	JC92-01455A	PBA SUB-FEED SENSOR;CLP-500,SEC,-,FEED S	F6152	SA
9.20-3	JC72-01135A	PMO-ACTUATOR FEED SENSOR;CLP-500,PC,BLAC	F6157	SA
9.20-4	JC70-00389A	IPR-BRKT PAPER GUIDE;CLP-500,SECC,-,T1.2	G2106	SNA
9.20-5	JC63-00235A	SHEET-PAPER GUIDE;CLP-500,PC,T=0.3,W31.6	S0085	SA
9.20-6	JC72-01160A	PMO-GUIDE PAPER PATH;CLP-500,HIPS,BLACK,	K3910	SA

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9.20-7	JC61-00050A	SPRING ETC-ACTUATOR;ML-6060A,SUS304-WPB,	Z4132	SA
9.21 ITB Cam Unit				
9.21-0	JC96-03216A	ELA UNIT-ITB CAM;CLP-510,SEC,EXPORT,ITB	I2131	SA
9.21-1	JC72-01154A	PMO-DUMMY ITB CAM LOWER;CLP-500,HIPS,BLA	D2090	SNA
9.2-12	JC96-03242A	ELA UNIT-OPE PANEL;CLP-510,SEC,EXPORT,-,	Z2649	SA
9.21-2	JC92-01651A	PBA SUB-PTL_THER;CLP-510,SEC,KOREA,PTL_T	P2135	SA
9.21-3	JC72-01187A	PMO-PTL PATH;CLP-500,PC,TRP,-,KC7133R,-,	K4055	SA
9.21-4	JC66-00548A	SHAFT-ITB CLEAN CAM;CLP-500,SUM24L,L160.	S4110	SA
9.21-5	JC66-00511A	CAM-ITB CLEANING;CLP-500,POM,-,-,BLACK,L	K2893	SNA
9.21-6	JC61-00699A	BUSH-D6/L4;CLP-500,BRONZE+ST,ID6.0,OD9.0	K2874	SA
9.21-7	6044-000125	RING-E;ID4,OD9,T0.6,PASS,STSC	T2001	SA
9.21-8	JC72-01155A	PMO-DUMMY ITB CAM UPPER;CLP-500,HIPS,BLA	D2091	SNA
9.21-9	JC39-00381A	CBF HARNESS-ITB D_SET;CLP-510,WIRE HARNE	C3122	SA
9.21-10	JC72-01136A	PMO-COVER CAM SHAFT;CLP-500,HIPS,BLACK,-	S4071	SNA
9.21-11	JC61-00717A	GUIDE-PTL SPRING;CLP-500,POM,-,-,-,BLACK	G2092	SNA
9.21-12	6107-001203	SPRING-ES;SUS304-WPB,-,PI0.5,D4.5,L17.2,	S0088	SNA
9.21-13	6044-000001	RING-CS;ID3,OD3,T0.25,BLACK,SUS304	D4088	SNA
9.22 Dummy Fuser Base Ass'y				
9.22-0	JC96-02795A	ELA UNIT-DUMMY FUSER BASE;CLP-500,SEC,EX	D2014	SA
9.22-1	JC72-01142A	PMO-DUMMY FUSER BASE;CLP-500,PBT+GF30%,B	D2087	SA
9.22-2	JC72-01140A	PMO-COVER FUSER AC;CLP-500,PBT+GF30%,BLA	Z2607	SA
9.22-3	JC70-10961A	IPR-TERMINAL FU;ML-165,C5210P,-,T0.3,-,-	K3422	SA
9.22-4	JC39-00288A	CBF HARNESS-SMPS_AC WIRE;CLP-500,WIRE HA	H1250	SA
	0105-000101	PAPER-ART;75G,W216,-,WHITE,XEROX 3R2047,		SNA
	0105-001032	PAPER-ART;-,W210,-,WHITE,HANSOL,L297		SNA
	0201-001162	ADHESIVE-CYA;LOCTITE403,NTR,1250,20G		SNA
	0201-001183	ADHESIVE-AA;ARON ALPHA #202F,NTR,100,20G		SNA
	0202-000008	SOLDER-WIRE;HI-FLO,3.0,-,D3.0,63SN/37PB,		SNA
	0202-000108	SOLDER-CREAM;RMA-20-21L,-,20~38 §-,62.8SS		SNA
	0202-000137	SOLDER-WIRE FLUX;KR-19 RMA SF,-,D0.7,60S		SNA
	0202-001025	FLUX;KS-611,-,-,-,SPRAY		SNA
	0203-000007	TAPE-FILAMENT;3M,T0.15,W18,L55M,TRP		SNA
	0203-001102	TAPE-OPP MASKING;OPP-2,T0.05,W100,L400M,		SNA
	0203-001189	TAPE-ACETATE;#810,T0.05,W12,L65000,NTR		SNA
	0203-001235	TAPE-PAPER;YW-692,T0.15,W5.8,L4000M,-		SNA
	0203-001236	TAPE-PAPER;YW-4620,T0.12,W6.2,L4000M,-		SNA
	0204-000469	THINNER;#4662,-,0.795,-		SNA
	0205-001007	GREASE-BEARING;NYOGEL 759G,HYDROCARBON B		SNA
	0205-001056	GREASE-GRAPHITE;CRS841,WHT,-		SNA
	0205-001059	GREASE-BEARING;PETAMO GHV 133,BEIGE,15KG		SNA
	0205-001067	GREASE-GRAPHITE;NYOGEL 756G,HYDRO CARBON		SNA
	0205-001080	GREASE-BEARING;NYOGEL 774H,NOISE DAMPING		SNA
	0205-001144	GREASE-BEARING;SF-112,HANARL,NOISE TAMPI		SNA
	0401-000005	DIODE-SWITCHING;1N4148,75V,150MA,DO-35,T		SA
	0401-000116	DIODE-SWITCHING;MMSD914T1,100V,200MA,SOD		SNA
	0402-000129	DIODE-RECTIFIER;1N4003,200V,1A,DO-41,TP		SA
	0402-001189	DIODE-RECTIFIER;M4,400V,1A,TS-1,TP		SNA
	0403-000471	DIODE-ZENER;1N5271B,100V,5%,500mW,DO-35,		SNA
	0403-000525	DIODE-ZENER;1N4733A,5%,1000MW,DO-41,TP		SA
	0403-001507	DIODE-ZENER;ZT10-300B,5%,1000MW,DO-41,BK		SA
	0404-000112	DIODE-SCHOTTKY;RB420D,40V,100MA,SOT-23,T		SA
	0407-000101	DIODE-ARRAY;DA204K,20V,100mA,C2-3,SOT-23		SA
	0501-000010	TR-SMALL SIGNAL;KSC1008,NPN,800mW,TO-92,		SA
	0501-000279	TR-SMALL SIGNAL;KSA1182-Y,PNP,150mW,SOT-		SA

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	0501-000294	TR-SMALL SIGNAL;KSA708-Y,PNP,800mW,TO-92		SA
	0501-000457	TR-SMALL SIGNAL;MMBT2222A,NPN,350MW,SOT-		SA
	0502-000245	TR-POWER;KSB1151-Y,PNP,1.3W,TO-126,-,16		SA
	0502-001048	TR-POWER;KSD1691,NPN,1.3W,TO-126,BK,160		SA
	0601-000353	LED;ROUND,RED/Y-GRN,5mm,630/570nm		SA
	0601-001138	LED-IR;ROUND,5mm,150mW,4V,950nm,BK		SNA
	0601-001383	LED;ROUND,RED,3.0MM,700NM		SNA
	0601-001444	LED;SMD,GRN,1MM,560NM,3X1.5X1.4MM		SNA
	0603-001021	PHOTO TR;NPN,20V,5V,20mA,75mW,TP		SA
	0604-001154	PHOTO-INTERRUPTER;TR,0.2-1.0MA,80MW,DIP,		SA
	0604-001257	PHOTO-INTERRUPTER;TR,-,-,DIP-4,BK		SNA
	0803-001097	IC-TTL;7407,BUFFER/DRIVER,DIP,14,300MIL,		SA
	0803-001393	IC-TTL;7407,BUFFER/DRIVER,SOP,14,150MIL,		SA
	0803-003263	IC-CMOS LOGIC;74LCX07,HEX BUFFER,SOIC,14		SA
	0803-003264	IC-CMOS LOGIC;74LCX06,HEX INVERTER/BUFFE		SNA
	0904-001752	IC-USC;NET2270,16BIT,TQFP,64P,10X10MM,30		SNA
	1001-000170	IC-ANALOG SWITCH;MC14051BD,SPDT CMOS,SOP		SA
	1006-001250	IC-LINE DRIVER;DS90LV017A,SOIC,8P,150MIL		SA
	1103-001183	IC-EEPROM;24C04,512x8,SOP,8P,5x4mm,2.5/5		SA
	1103-001328	IC-EEPROM;93C86,2KX8/1KX16BIT,DIP,8P,9.2		SA
	1105-001384	IC-DRAM;K4S561632,4X4MX16BIT,TSOP(II),54		SA
	1107-001287	IC-FLASH MEMORY;29LV400,512x8/256x16,TSO		SNA
	1202-000164	IC-VOLTAGE COMP.;393,SOP,8P,150MIL,DUAL,		SA
	1203-002220	IC-POSI.ADJUST REG.;LD1117,DPAK,3P,240MI		SA
	1203-002233	IC-RESET;XC61F,SOT-23,3P,-,PLASTIC,0.7/1		SNA
	1205-002339	IC-CLOCK GENERATOR;CY25811SC,SOIC,8P,150		SA
	1404-001141	THERMISTOR-NTC;5.6Kohm,5%,3200K,2.1mW/C,		SNA
	2001-000008	R-CARBON;15KOHM,5%,1/8W,AA,TP,1.8X3.2MM		SA
	2001-000047	R-CARBON;2.2KOHM,5%,1/4W,AA,TP,2.4X6.4MM		SA
	2001-000058	R-CARBON;5.6Kohm,5%,1/4W,AA,TP,2.4x6.4mm		SNA
	2001-000111	R-CARBON;150OHM,5%,1/4W,AA,TP,2.4X6.4MM		SA
	2001-000281	R-CARBON;100OHM,5%,1/8W,AA,TP,1.8X3.2MM		SA
	2001-000290	R-CARBON;10KOHM,5%,1/8W,AA,TP,1.8X3.2MM		SA
	2001-000429	R-CARBON;1KOHM,5%,1/8W,AA,TP,1.8X3.2MM		SA
	2001-000577	R-CARBON;2KOHM,5%,1/8W,AA,TP,1.8X3.2MM		SA
	2001-000621	R-CARBON;300KOHM,5%,1/4W,AA,TP,2.4X6.4MM		SNA
	2001-000812	R-CARBON;5.6KOHM,5%,1/8W,AA,TP,1.8X3.2MM		SA
	2001-000935	R-CARBON;68OHM,5%,1/4W,AA,TP,2.4X6.4MM		SA
	2003-000557	R-METAL OXIDE(S);2.2ohm,5%,3W,AA,TP,6x16		SA
	2003-000631	R-METAL OXIDE(S);3.3ohm,5%,3W,AA,TP,6x16		SA
	2005-001058	R-WIRE WOUND;0.39ohm,1%,1W,AA,TP,4.3x12m		SNA
	2007-000033	R-CHIP;0ohm,5%,1/4W,TP,3216		SA
	2007-000066	R-CHIP;20Kohm,1%,1/10W,TP,1608		SA
	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608		SA
	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608		SA
	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608		SA
	2007-000082	R-CHIP;3.3Kohm,5%,1/10W,TP,1608		SA
	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608		SA
	2007-000086	R-CHIP;5.6Kohm,5%,1/10W,TP,1608		SA
	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608		SA
	2007-000092	R-CHIP;15Kohm,5%,1/10W,TP,1608		SA
	2007-000097	R-CHIP;47Kohm,5%,1/10W,TP,1608		SA
	2007-000102	R-CHIP;100Kohm,5%,1/10W,TP,1608		SA
	2007-000113	R-CHIP;33ohm,5%,1/10W,TP,1608		SA
	2007-000116	R-CHIP;120ohm,5%,1/10W,TP,1608		SA
	2007-000118	R-CHIP;390ohm,5%,1/10W,TP,1608		SA

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	2007-000122	R-CHIP;1.2Kohm,5%,1/10W,TP,1608		SA
	2007-000123	R-CHIP;1.5Kohm,5%,1/10W,TP,1608		SA
	2007-000134	R-CHIP;33Kohm,5%,1/10W,TP,1608		SA
	2007-000309	R-CHIP;10ohm,5%,1/10W,TP,1608		SA
	2007-000539	R-CHIP;200ohm,5%,1/10W,TP,1608		SA
	2007-000608	R-CHIP;240ohm,5%,1/10W,TP,1608		SA
	2007-000729	R-CHIP;300ohm,5%,1/10W,TP,1608		SA
	2007-000736	R-CHIP;30Kohm,1%,1/10W,TP,1608		SNA
	2007-000839	R-CHIP;39ohm,5%,1/10W,TP,1608		SA
	2007-000842	R-CHIP;3Kohm,1%,1/10W,TP,1608		SA
	2007-000939	R-CHIP;47Kohm,1%,1/10W,TP,1608		SNA
	2007-000965	R-CHIP;5.1Kohm,5%,1/10W,TP,1608		SA
	2007-001002	R-CHIP;510ohm,5%,1/10W,TP,1608		SA
	2007-001044	R-CHIP;56ohm,5%,1/10W,TP,1608		SNA
	2007-001134	R-CHIP;68ohm,5%,1/10W,TP,1608		SA
	2007-007004	R-CHIP;12Kohm,1%,1/10W,TP,1608		SA
	2007-007445	R-CHIP;9.09Kohm,1%,1/10W,TP,1608		SNA
	2007-007726	R-CHIP;35.7ohm,1%,1/10W,TP,1608		SA
	2007-008567	R-CHIP;15.4KOHM,1%,1/10W,TP,1608		SNA
	2008-000166	R-FUSIBLE;56ohm,5%,1/4W,AA,TP,2.6x6.7mm		SA
	2009-001085	R-METAL GLAZE;10Mohm,3%,1/2W,CM,BK,18x4m		SNA
	2011-001011	R-NET;10Kohm,5%,1/16W,L,CHIP,8P,TP,3.2x1		SNA
	2011-001094	R-NET;39OHM,5%,1/16W,L,CHIP,8P,TP		SA
	2201-000017	C-CERAMIC,DISC;1NF,10%,50V,Y5P,TP,5X3.5M		SA
	2201-000119	C-CERAMIC,DISC;100NF,+80-20%,50V,Y5V,TP,		SA
	2201-000138	C-CERAMIC,DISC;0.1NF,10%,50V,Y5P,TP,4X4M		SA
	2203-000041	C-CER,CHIP;0.01NF,0.25PF,50V,C0G,TP,1608		SA
	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,TP,1608		SA
	2203-000192	C-CER,CHIP;100nF,+80-20%,50V,Y5V,TP,2012		SA
	2203-000236	C-CER,CHIP;0.1NF,5%,50V,C0G,TP,1608		SA
	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,TP,1608		SA
	2203-000426	C-CER,CHIP;0.018NF,5%,50V,C0G,TP,1608		SA
	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,TP,1608,-		SA
	2203-000476	C-CER,CHIP;1000nF,+80-20%,16V,Y5V,-,2012		SA
	2203-000626	C-CER,CHIP;0.022nF,5%,50V,C0G,TP,1608		SA
	2203-000783	C-CER,CHIP;0.33NF,5%,50V,C0G,TP,1608		SA
	2203-000815	C-CER,CHIP;0.033NF,5%,50V,C0G,TP,1608		SA
	2203-000998	C-CER,CHIP;0.047NF,5%,50V,C0G,TP,1608		SA
	2203-001598	C-CER,CHIP;2200nF,+80-20%,16V,Y5V,TP,201		SA
	2203-001656	C-CER,CHIP;0.47nF,5%,50V,NP0,TP,1608		SA
	2203-001683	C-CER,CHIP;0.068nF,5%,50V,NP0,TP,1608		SA
	2401-000007	C-AL;470UF,20%,16V,GP,TP,8X11.5MM,3.5		SNA
	2401-000042	C-AL;100uF,20%,16V,GP,TP,6.3x7,5		SA
	2401-000207	C-AL;100uF,20%,50V,WT,TP,8x12,5		SNA
	2401-000414	C-AL;10uF,20%,16V,GP,TP,4x7,5		SNA
	2401-000802	C-AL;220uF,20%,16V,GP,TP,10x9mm,5mm		SNA
	2401-002300	C-AL;47uF,20%,50V,GP,TP,6.3x11,5		SA
	2404-000284	C-TA,CHIP;10uF,20%,16V,-,TP,3528		SA
	2703-000300	INDUCTOR-SMD;1uH,10%,1608		SA
	2801-003582	CRYSTAL-UNIT;30MHz,50ppm,28-AAA,18pF,80o		SA
	2801-003886	CRYSTAL-UNIT;12MHz,50ppm,28-AAA,16pF,50o		SNA
	2802-001069	RESONATOR-CERAMIC;7.37MHz,0.5%,TP,4.7x4.		SNA
	2804-001613	OSCILLATOR-CLOCK;23.8807363MHZ,50PPM,15P		SA
	2901-001178	FILTER-EMI SMD;25V,2A,-,100000pF,2x1.25x		SA
	3301-000325	BEAD-SMD;60ohm,3.2x2.5x1.3mm,400mA,TP,,,		SNA
	3301-001015	BEAD-AXIAL;70ohm,3.6x0.65x5mm,6000mA,TP,		SNA

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Draw#	Part Code	Description	Location	SNA
	3301-001240	BEAD-SMD;120ohm,1.6x0.8x0.8mm,200mA,TP,-		SNA
	3301-001258	BEAD-SMD;600ohm,1608,100mA,,,,1.8ohm		SNA
	3301-001594	BEAD-SMD;90ohm,2.0*1.2*1.3mm,-,TP,-,-,-		SA
	3404-000165	SWITCH-TACT;12V,50mA,160gf,6x6mm,SPST		SA
	3702-001121	CONNECTOR-RIBBON;60P,MALE,STRAIGHT,AUF		SA
	3704-000349	SOCKET-IC;8P,DIP,SN,2.54MM		SNA
	3708-001408	CONNECTOR-FPC/FFC/PIC;12P,1MM,STRAIGHT,S		SA
	3709-001131	CONNECTOR-CARD EDGE;100P,1.27MM,STRAIGHT		SNA
	3711-000164	CONNECTOR-HEADER;1WALL,2P,1R,2.5mm,STRAI		SNA
	3711-000198	CONNECTOR-HEADER;1WALL,3P,1R,2.5mm,STRAI		SNA
	3711-000225	CONNECTOR-HEADER;1WALL,4P,1R,2.5mm,STRAI		SNA
	3711-002000	CONNECTOR-HEADER;BOX,18P,2R,2mm,STRAIGHT		SNA
	3711-002003	CONNECTOR-HEADER;BOX,26P,2R,2mm,STRAIGHT		SNA
	3711-002808	CONNECTOR-HEADER;BOX,7P,1R,2mm,STRAIGHT,		SNA
	3711-002809	CONNECTOR-HEADER;BOX,8P,1R,2mm,STRAIGHT,		SA
	3711-002810	CONNECTOR-HEADER;BOX,9P,1R,2mm,STRAIGHT,		SNA
	3711-002811	CONNECTOR-HEADER;BOX,10P,1R,2mm,STRAIGHT		SNA
	3711-002813	CONNECTOR-HEADER;BOX,12P,1R,2mm,STRAIGHT		SA
	3711-003408	CONNECTOR-HEADER;BOX,2P,1R,2mm,STRAIGHT,		SNA
	3711-003409	CONNECTOR-HEADER;BOX,3P,1R,2mm,STRAIGHT,		SNA
	3711-003410	CONNECTOR-HEADER;BOX,4P,1R,2mm,STRAIGHT,		SNA
	3711-003411	CONNECTOR-HEADER;BOX,5P,1R,2mm,STRAIGHT,		SNA
	3722-001101	JACK-USB;4P/1C,AU,IVR,ANGLE,B TYPE		SNA
	3903-000085	CBF-POWER CORD;DT,US,BP3/YES,I(IEC C13/C	K2903	SA
	6001-000125	SCREW-MACHINE;BH,+,M3,L4,ZPC(YEL),SM20C,		SNA
	6001-000485	SCREW-MACHINE;PH,+,M2.6,L4,ZPC(YEL),SWRC		SNA
	6001-001068	SCREW-MACHINE;PH,+,M2,L16,BLK,SWRCH18A,-		SNA
	6002-000175	SCREW-TAPPING;PWH,+,2,M3,L8,ZPC(YEL),SM2		SNA
	6002-000308	SCREW-TAPTITE;PH,+,B,M2.6,L6,ZPC(YEL),SW		SA
	6003-000115	SCREW-TAPTITE;BH,+,B,M3,L6,ZPC(BLK),SWRC		SA
	6003-000152	SCREW-TAPTITE;PH,+,B,M2,L10,ZPC(YEL),SWR		SA
	6003-000196	SCREW-TAPTITE;PWH,+,B,M3,L10,NI PLT,SWRC		SA
	6003-000264	SCREW-TAPTITE;PWH,+,B,M3,L6,ZPC(YEL),SWR		SNA
	6003-000266	SCREW-TAPTITE;PWH,+,S,M3,L6,ZPC(YEL),SWR		SNA
	6003-000267	SCREW-TAPTITE;PWH,+,S,M3,L8,ZPC(YEL),SWR		SA
	6003-000269	SCREW-TAPTITE;BH,+,S,M3,L6,ZPC(YEL),SWRC		SA
	6003-000282	SCREW-TAPTITE;BH,+,B,M3,L8,ZPC(BLK),SWCH		SA
	6003-001001	SCREW-TAPTITE;FH,+,B,M3,L8,ZPC(BLK),SWRC		SNA
	6003-001256	SCREW-TAPTITE;BH,+,B,M4,L10,NI PLT,SWRCH		SNA
	6006-001078	SCREW-TAPTITE;WSP,PH,+,M3,L10,ZPC(YEL),S		SNA
	6006-001193	SCREW-MACHINE;WSP,PH,+,M3,10,ZPC(YEL),SW		SNA
	6009-001396	SCREW-SPECIAL;PH,+,-,M3,L10.3,ZPC(BLK),S		SNA
	6031-000019	WASHER-PLAIN;-,ID6.1,OD8.5,T0.1,BLK,POLY		SNA
	6031-001490	WASHER-PLAIN;POLYMIDE,-,ID7.1,OD14,T0.13		SNA
	6031-001491	WASHER-PLAIN;POLYMIDE,-,ID8.1,OD12,T0.2,		SNA
	6043-001097	PIN-SPRING;W,D2,L14,-,SUS304 CS 1/2H,T0.		SNA
	6107-001197	SPRING-CS;SUS304-WPB,-,PI0.9,D5.6,L27,-,		SNA
	6107-001204	SPRING-ES;SUS304-WPB,-,PI0.6,D7.5,L22.9,		SNA
	6107-001206	SPRING-TS;SUS304-WPB,BLACK,PI1.5,D10,L5,	S0011	SNA
	6107-001208	SPRING-TS;SWP,RIGHT,PI1.4,D9.2,L6.5,-,-,		SNA
	6107-001212	SPRING-TS;SUS304-WPB,-,PI0.9,D13,L4.7,-,		SNA
	6501-000004	CABLE TIE;DA-80,T1,W2.5,L80,NTR,NYLON66	K2756	SA
	6601-001227	BEARING-BALL;L-1680HH,ID8,OD16,L5.0,SUS4		SNA
	6902-000048	BAG PE;LDPE,T0.03,L400,W400,TRP,8,2,PE M		SNA
	6902-000288	BAG PE;LDPE,T0.05,W250,L450,TRP,8,2-		SNA
	6902-000332	BAG CONDUCTIVE;PE+CARBON,T0.1,W250,L500,		SNA

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	6902-000606	BAG CONDUCTIVE;PE+CARBON,T0.1,W305,L475,		SNA
	6902-000655	BAG PE;HDPE,T0.03,W800,L1300,TRP,28,6M T		SNA
	JB13-00004A	IC ASIC-OPE;SF-3100,HT48C5,SSOP,48P,16.1		SA
	JB68-00072A	LABEL(R)-BAR RIBON;SF-3000,PY,80X91000,T		SNA
	JB68-00073A	LABEL(R)-BAR CODE;SF-3000,PY,38X6.5,T0.1		SNA
	JB68-00916A	LABEL RATING-BLANK;SF-340,SEC,TETRON,0.0		SNA
	JB75-10028A	MEC-RIBBON BARCODE S;-,-,PW-2,PI1, D4.9,		SNA
	JB75-10029A	MEC-RIBBON BARCODE S;COLUMBUS,KISCOM,BLK		SNA
	JC02-00017A	TONER-GRINDED BLACK;CLP-500,SA-79EK-B,BL		SNA
	JC02-00018A	TONER-GRINDED YELLOW;CLP-500,SA-79EK-Y,Y		SNA
	JC02-00019A	TONER-GRINDED MAGENTA;CLP-500,SA-79EK-M,		SNA
	JC02-00020A	TONER-GRINDED CYAN;CLP-500,SA-79EK-C,CYA		SNA
	JC13-00014C	IC ASIC-SPGPM(3);SPGPM_D,SCX-6320F,256PI		SA
	JC13-00020A	IC ASIC-ENGINE CONTROL;LPEC1,CLP-500,128		SA
	JC33-00011A	SOLENOID-DEVE HVPS;-,CLP-500,DC24V,190§Ù	S7079	SA
	JC39-00277A	CBF HARNESS-MAIN ERASER;CLP-500,WIRE HAR	E3000	SA
	JC39-00282A	CBF HARNESS-MAIN_P.EMPTY;CLP-500,WIRE HA	H1144	SA
	JC39-00284A	CBF HARNESS-MAIN_FEED;CLP-500,WIRE HARNE	F6045	SA
	JC39-00285A	CBF HARNESS-MAIN-TEMPERATURE;CLP-500,WIR	H1158	SA
	JC39-00286A	CBF HARNESS-MAIN_MP.EMPTY;CLP-500,WIRE H	H1142	SA
	JC39-00290A	CBF HARNESS-ERASER_BOARD;CLP-500,WIRE HA	H1077	SA
	JC39-00294A	CBF HARNESS-MAIN_S/W(5V);CLP-500,WIRE HA	H1148	SA
	JC39-00295A	CBF HARNESS-SMPS_COVER S/W;CLP-500,WIRE	H1251	SA
	JC39-00306A	CBF HARNESS-LCD;CLP-500,WIRE,UL2877,14-1		SA
	JC39-00379A	CBF HARNESS-EX_WASTE;CLP-510,WIRE HARNES		SA
	JC39-00380A	CBF HARNESS-PTL_THER;CLP-510,WIRE HARNES		SA
	JC39-00382A	CBF HARNESS-ITB D_ITB;CLP-510,WIRE HARNE		SNA
	JC39-00383A	CBF HARNESS-DEVE OEM;CLP-510,WIRE HARNES		SA
	JC39-00385A	CBF HARNESS-SUPPLY;CLP-510,WIRE HARNESS,		SA
	JC39-00388A	CBF SIGNAL-DEVE DRI;CLP-510,12PIN,FFC,18		SA
	JC39-40511A	CBF HARNESS;ML-80,JUMPER,AWG22,52mm,SILV		SA
	JC41-00133A	PCB-SENSOR;SCX-5100,FR-1,1L,V1.0,1.6T,11		SNA
	JC41-00166A	PCB-DEVE BIAS;CLP-500,FR-1,1L,-,1.6,55*2		SNA
	JC41-00169A	PCB-TEMPERATURE;CLP-500,FR-1,1L,-,1.6,22		SNA
	JC41-00201A	PCB-TONER_TX;CLP-500,FR-1,1L,-,1.2,15*10		SNA
	JC41-00202A	PCB-TONER_RX;CLP-500,FR-1,1L,-,1.2,15*10		SNA
	JC41-00224A	PCB SUB-GINKGO_DEVE_CRUM;CLP-500,FR-4,2		SNA
	JC41-00225A	PCB SUB-GINKGO_ITB;CLP-500,FR-4,2L,-,1.6		SNA
	JC41-00254A	PCB MAIN-CONT_BB_PLUS;CLP-510,FR-4,4,-,1		SNA
	JC41-00255A	PCB SUB-OEM_BB_PLUS;CLP-510,FR-1,1L,-,1.		SNA
	JC41-00256A	PCB SUB-DRIVER_BB_PLUS;CLP-510,FR-1,1L,-		SNA
	JC41-00257A	PCB MAIN-CONT_BB_PLUS;CLP-510,FR-1,1,0.1		SNA
	JC41-10519A	PCB-PTL;ML-165,FR-1,1L,T1.6mm,217.7X9m		SNA
	JC46-00232A	S/W APPLICATION-DRV;-,CLP-510,CLP DRV,1.		SNA
	JC61-00011A	SPRING ETC-FEED;SF-5100,SUS304WPB,0.6,-,		SA
	JC61-00032A	SPRING ETC--HV SMALL;ML-6060A,SUS 304 WP		SNA
	JC61-00035A	SPRING ETC-HV APOLLO;SF-5100,SUS304WPB,0		SNA
	JC61-00549A	SPRING ETC-PICKUP,MP;SCX-5312F,SUS304-WP	P2165	SA
	JC61-00714A	STOPPER-STACKER F;CLP-500,POM,-,-,-,WHIT	Z5098	SA
	JC61-00715A	STOPPER-STACKER R;CLP-500,POM,-,-,-,WHIT	Z5099	SA
	JC61-00753A	PLATE-DUMMY Y;CLP-500,SUS304CSP,1/2H,T0.		SNA
	JC61-00754A	PLATE-DUMMY BK;CLP-500,SUS304CSP,1/2H,T0		SNA
	JC61-00772A	BUSH-DEV DR;CLP-500,BRONZE,ID7.0,OD9.4,L		SNA
	JC61-00774A	BUSH-DEV SR;CLP-500,BRONZE,ID4.0,OD7.0,L		SNA
	JC61-00827A	BLADE-SUS BLACK;CLP-500,SUS301-CSP 1/2H,		SNA
	JC61-00828A	BLADE-SUS COLOR;CLP-500,SUS301-CSP 1/2H,		SNA

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	JC61-00839A	BLADE-CLEANING;CLP-500,URETHAN,TRP,W15*L		SNA
	JC61-00869A	FRAME-M-DRAWER CONNECTOR;CLP-500,PET+GF3		SNA
	JC61-00977A	HOLDER-M-TR REAR;CLP-510,POM,-,-,-,BLACK		SNA
	JC61-00980A	HOLDER-M-SHAFT_OPC;CLP-510,POM,5,16,PI 1		SNA
	JC61-00981A	GUIDE-M-BRACKET_C;CLP-510,ABS,4,4.4,239.		SNA
	JC61-00982A	BRACKET-P-SEAL_C;CLP-510,SECC,0.8,239.6,		SNA
	JC61-00983A	BUSH-TR;CLP-510,BRONZE+ST,ID6.0,OD10.0,L		SNA
	JC61-00985A	BRACKET-P-SEAL_BK;CLP-510,SECC,0.8,239.6		SNA
	JC61-00986A	GUIDE-M-BRACKET_BK;CLP-510,ABS,4,6,239.6		SNA
	JC61-00989A	STOPPER-M-ITB SPACER F/R;CLP-510,ABS,V0,		SNA
	JC61-00989B	STOPPER-M_REAR;CLP-510,ABS,V0,T3.0,-,-,G		SNA
	JC62-00091A	SEAL-MANUAL SHEET;CLP-500,PE FOAM,-,T=10		SNA
	JC62-00092A	SEAL-SIDE BLADE DEVE;CLP-500,PE FOAM,-,T		SNA
	JC62-00093A	SEAL-BLADE INNER;CLP-500,SM55 FOAM,-,T=2		SNA
	JC62-00094A	SEAL-BLADE UPPER;CLP-500,URETHANE FOAM,-		SNA
	JC62-00096A	SEAL-DUST PROOF LSU;CLP-500,PET FILM,-,T		SNA
	JC62-00097A	SEAL-COVER WASTE TANK;CLP-500,URETHAN FO		SNA
	JC62-00098A	SEAL-GUIDE ERASER LAMP;CLP-500,NITTO #50		SNA
	JC62-00099A	SEAL-SHUTTER;CLP-500,URETHAN FOAM,-,T=2.		SNA
	JC62-00100A	SEAL-SIDE BLADE;CLP-500,URETHAN FOAM,-,T		SNA
	JC62-00101A	SEAL-U_COVER WASTE TANK;CLP-500,URETHAN		SNA
	JC62-00102A	SEAL-URETHAN FILM;CLP-500,URETHAN FILM,-		SNA
	JC62-00103A	SEAL-TEFLON FELT FRONT;CLP-500,TEFLON FE		SNA
	JC62-00104A	SEAL-TEFLON FELT REAR;CLP-500,TEFLON FEL		SNA
	JC62-00105A	SEAL-CLEANING BLADE;CLP-500,URETHANE FOA		SNA
	JC62-00106A	SEAL-SHUTTER 2;CLP-500,URETHAN FOAM,-,T4		SNA
	JC62-00107A	SEAL-COLLAR PORON;CLP-500,PORON,-,T2.0,		SNA
	JC62-00108A	SEAL-BRACKET SIDE;CLP-500,URETHANE FOAM,		SNA
	JC62-00115A	SEAL-BRACKET UPPER;CLP-500,EPDM,-,T2.5,W		SNA
	JC62-00116A	SEAL-DUMMY HOLE UPPER;CLP-500,PE FOAM,-,		SNA
	JC62-00117A	SEAL-DUMMY COVER;CLP-500,PPMB,-,T1.0,W22		SNA
	JC62-00118A	SEAL-FELT BLACK F;CLP-500,TEFLON FELT,-,		SNA
	JC62-00122A	SEAL-SIDE BLOCK;CLP-500,PE FOAM,-,T3.5,W		SNA
	JC62-00123A	SEAL-SIDE SR F;CLP-500,PORON ,-,T5.0,W5,		SNA
	JC62-00124A	SEAL-SUPPLY COLOR F;CLP-500,PORON LE20,-		SNA
	JC62-00125A	SEAL-SUPPLY COLOR R;CLP-500,PORON LE20,-		SNA
	JC62-00126A	SEAL-SUPPLY BLACK F;CLP-500,PORON LE20,-		SNA
	JC62-00127A	SEAL-SUPPLY BLACK R;CLP-500,PORON LE20,-		SNA
	JC62-00128A	SEAL-SIDE DUMMY COVER;CLP-500,PE FOAM,-,		SNA
	JC62-00131A	SEAL-BRACKET INNER_BK;CLP-500,PE FOAM,GR		SNA
	JC62-00132A	SEAL-UPPER COVER;CLP-500,URETHANE FORM,G		SNA
	JC62-00133A	SEAL-BLADE INNER_BK;CLP-500,EPDM,GRAY,T2		SNA
	JC62-00140A	SEAL-BLADE SIDE_BK;CLP-500,PE FORM,GRAY,		SNA
	JC62-00144A	SEAL-AGITATOR_C;CLP-500,PORON(LE-20),-,5		SNA
	JC63-00179A	COVER-FRONT HINGE F;CLP-500,POM,-,-,-,-	H3009	SA
	JC63-00205A	COVER-M-DUMMY BLACK;CLP-500,ABS,-,-,-,HB		SNA
	JC63-00206A	COVER-M-DUMMY CYAN;CLP-500,ABS,-,-,-,HB,		SNA
	JC63-00228A	SHEET-AGITATOR A;CLP-500,PET,T=0.1,W16.5		SNA
	JC63-00229A	SHEET-AGITATOR B;CLP-500,PET,T=0.1,W16.5		SNA
	JC63-00230A	SHEET-COVER DUMMY;CLP-500,TETRON,T=0.1,W		SNA
	JC63-00231A	SHEET-DEVE FRAME;CLP-500,PET,T=0.125,W27		SNA
	JC63-00232A	SHEET-ITB WASTE;CLP-500,PE FILM,T=0.2,W1		SNA
	JC63-00233A	SHEET-ITB BUFFER;CLP-500,PE FILM,T=0.3,W		SNA
	JC63-00237A	SHEET-ITB MAIN;CLP-500,URETHAN FILM,T=0.		SNA
	JC63-00238A	SHEET-ITB LOW;CLP-500,PE FILM,T=0.2,W21,		SNA
	JC63-00239A	SHEET-ITB TRC;CLP-500,PE FILM,T=0.2,W24.		SNA

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	JC63-00241A	SHEET-ITB BLADE;CLP-500,PE SHEET,T=0.2,W		SNA
	JC63-00248A	SHEET-HV HARNESS;CLP-500,PC,T0.5,W33.5,L	H1336	SA
	JC63-00278A	SHEET-REAR BLACK;CLP-500,PET FILM,T0.054		SNA
	JC63-00279A	SHEET-REAR COLOR;CLP-500,PET FILM,T0.054		SNA
	JC63-00280A	SHEET-RECYCLE BLACK;CLP-500,PET FILM,T0.		SNA
	JC63-00281A	SHEET-RECYCLE COLOR;CLP-500,PP FILM,T0.1		SNA
	JC63-00282A	SHEET-SUPPLY COLOR;CLP-500,URETHANE SHEE		SNA
	JC63-00283A	SHEET-TONER RECYCLE;CLP-500,PET FILM,T0.		SNA
	JC63-00284A	SHEET-SUPPLY BLACK;CLP-500,PET,T0.2,W217		SNA
	JC63-00427A	SHEET-DEVE FRAME_C;CLP-500,PET,0.125,17,		SNA
	JC63-00552A	SHEET-COVER HOLE;CLP-510,PET FILM,T=0.1,		SNA
	JC63-00570A	SHEET-AGITATOR_D;CLP-510,PET,0.2,11.8,4.		SNA
	JC66-00486A	GEAR-OPC AUGER;CLP-500,POM,M0.8,Z19,-,-,		SNA
	JC66-00487A	GEAR-OPC DRUM;CLP-500,PC,LF1025,M0.6,Z12		SNA
	JC66-00490A	GEAR-OPC IDLE_Z35;CLP-500,POM,M0.6,Z35,-		SNA
	JC66-00491A	GEAR-OPC IDLE_Z42/Z28;CLP-500,POM,M0.6/M		SNA
	JC66-00492A	GEAR-OPC IDLE_Z21;CLP-500,POM,M0.8,Z21,-		SNA
	JC66-00493A	GEAR-OPC IDLE_Z32;CLP-500,POM,M0.8,Z32,-		SNA
	JC66-00494A	GEAR-OPC ROLL CLEAN_Z18;CLP-500,POM,M0.8		SNA
	JC66-00495A	GEAR-DEVE Z18/Z18;CLP-500,POM,M0.8/M0.6,		SNA
	JC66-00496A	GEAR-DEVE FRONT_Z18;CLP-500,POM,M0.6,Z18		SNA
	JC66-00497A	GEAR-DEVE IDEL_Z21;CLP-500,POM,M0.6,Z21,		SNA
	JC66-00498A	GEAR-DEVE IDEL_Z24;CLP-500,POM,M0.6,Z24,		SNA
	JC66-00499A	GEAR-DEVE IDEL A_Z30/Z19;CLP-500,POM,M0.		SNA
	JC66-00501A	GEAR-DEVE IDEL_Z43/Z19;CLP-500,POM,M0.6,		SNA
	JC66-00502A	GEAR-DEVE IDEL_Z16;CLP-500,POM,M0.6,Z16,		SNA
	JC66-00503A	GEAR-DEVE IDEL_Z23;CLP-500,POM,M0.6,Z23,		SNA
	JC66-00504A	GEAR-DEVE RECY_Z16;CLP-500,POM,M0.6,Z16,		SNA
	JC66-00505A	GEAR-ITB AUGER_Z28;CLP-500,POM,M0.5,Z28,		SNA
	JC66-00506A	GEAR-ITB CLEAN_Z57;CLP-500,POM,M0.5,Z57,		SNA
	JC66-00507A	GEAR-ITB DRIVE_Z60;CLP-500,POM,M0.5,Z60,		SNA
	JC66-00508A	GEAR-ITB IDLE 1_Z28;CLP-500,POM,M0.5,Z28		SNA
	JC66-00509A	GEAR-ITB IDLE 2_Z28;CLP-500,POM,M0.5,Z28		SNA
	JC66-00514A	GEAR-TRANSFER_Z23;CLP-500,POM,M0.8,Z23,-		SA
	JC66-00521A	GEAR-DEVE IDLE_Z18;CLP-500,POM,M0.6,Z18,		SNA
	JC66-00542A	ROLLER-ITB DRIVE;CLP-500,AL6063+EDPM,D29		SNA
	JC66-00603C	DRUM-OPC RICOH;CLP-500,AL,-,OD120,L266,-		SNA
	JC66-00604A	ROLLER-CHARGER CLEANING;CLP-500,URETHAN+		SNA
	JC66-00605A	ROLLER-DEV;CLP-500,NBR+ECO,¥Õ14.0,L228.8S		NA
	JC66-00606A	ROLLER-DEV SUPPLY;CLP-500,SILICON FOAM,		SNA
	JC66-00609B	ROLLER-ITB CLEAN BU;CLP-510,AL+SUM24L,¥ÕS		NA
	JC66-00610A	ROLLER-ITB T1;CLP-500,SUM22L,¥Õ12.0,L280S		NA
	JC66-00611B	ROLLER-ITB TENSION;CLP-510,AL+SUM24L,¥Õ1S		NA
	JC66-00613A	ROLLER-TRANSFER;CLP-500,EDPM+SUM24L,¥Õ24S		NA
	JC66-00620A	SHAFT-OPC DRUM;CLP-500,SUS416F,L310,¥Õ10S		NA
	JC66-00621A	DRUM-ITB BELT;CLP-500,PC+ALLOY,¥Õ120,-,WS		NA
	JC66-00933A	ROLLER-M-ITB BELT DF;CLP-510,POM,29.6,L1		SNA
	JC68-00274A	LABEL(R)-RIBBON;SF-5100,100,-,-,BLK		SNA
	JC68-00320A	MANUAL-(CARD)SEM SVC CARD;ML-5100A,SEM,X		SNA
	JC68-00573A	LABEL(R)-BARCODE;ML-4500,PET,T0.05,10mm,		SNA
	JC68-01134A	LABEL(P)-BLANK(FUSER);ML-1710D3,-,WHITE		SNA
	JC68-01154A	LABEL(R)-POP(A);CLP-500,-,PC+HOLOGRAM,T0		SNA
	JC68-01156A	MANUAL-SHEET DEVE;CLP-500,-,ENGLISH,-,AR		SNA
	JC68-01175A	LABEL(P)-FRONT INNER;CLP-500,-,YUPO PAPE	L0004	SNA
	JC68-01181A	LABEL(P)-TOP;CLP-500,-,YUPO PAPER,100G,W	L0005	SNA
	JC68-01226A	LABEL(R)-COLOR BLACK;CLP-500,-,FASCAL400		SNA

SA : Service Available, **SNA** : Service not Available

Draw#	Part Code	Description	Location	SNA
	JC68-01228A	LABEL(P)-OPC NOTICE;CLP-500,-,YOPO PAPER		SNA
	JC68-01229A	LABEL(R)-COLOR YELLOW;CLP-500,-,FASCAL40		SNA
	JC68-01230A	LABEL(R)-COLOR CYAN;CLP-500,-,FASCAL400P		SNA
	JC68-01231A	LABEL(R)-COLOR MAGENTA;CLP-500,-,FASCAL4		SNA
	JC68-01428A	MANUAL-QIG;CLP-510,SEE,16 LANGUAGE,GERMA		SNA
	JC68-01483A	MANUAL-SHEET ITB;CLP-510,SEC,ENGLISH,-,A		SNA
	JC68-01484A	MANUAL-QRG;CLP-510,XEROX,EN+FR+IT+GE+SP+		SNA
	JC68-01488A	MANUAL-DOC POCKET;CLP-510,SEC,ENGLISH,U.		SNA
	JC68-10914D	LABEL(P)-SERIAL NO;ML-85,ART,70X15,G100,		SNA
	JC68-10914E	LABEL SERIAL-YELLOW;CLP-510,SEC,ART,0.1,		SNA
	JC68-10914F	LABEL SERIAL-CYAN;CLP-510,SEC,ART,0.1,70		SNA
	JC68-10914G	LABEL SERIAL-MAGENTA;CLP-510,SEC,ART,0.1		SNA
	JC68-10932A	LABEL(P)-BLANK(ML);ML-85/85G,ART,70X60,G		SNA
	JC68-30928E	LABEL(P)-CAUTION, HOT_FU;ML-1430,-,PET,T	L0020	SNA
	JC69-00640A	CUSHION-SET MAIN;CLP-510,EPS,-,W611,L565		SNA
	JC69-00644A	BOX(P)-MAIN BBP;CLP-500,DW,A-1,596,550,5		SNA
	JC69-00732A	BOX(P)-PAD TOP;CLP-510,DW,-,-,615,545,-,		SNA
	JC70-00050A	IPR-TERMINAL;SF-5100,SWRCH1018,-,4.4,-,-		SNA
	JC70-00281A	IPR-BRKT CLEANING;ML-1650,SECC,-,250X18.		SNA
	JC70-00345A	IPR-BRKT SOLENOID;CLP-500,SECC,-,T1.2,-,	S8010	SNA
	JC70-00347A	IPR-CONTCAT DRUM(GND);CLP-500,C5201 1/2H		SNA
	JC70-00348A	IPR-CONTCAT ROLL CHARGER;CLP-500,SUS301-		SNA
	JC70-00349A	IPR-CONTCAT SOKET OEM;CLP-500,C5210 1/2H		SNA
	JC70-00350A	IPR-OPC SPRING HANDLE;CLP-500,SUS301-CSP		SNA
	JC70-00351A	IPR-ITB BRKT DRAW CONN.;CLP-500,SECC,-,T		SNA
	JC70-00352A	IPR-ITB PLATE SPRING HV;CLP-500,SUS304 C		SNA
	JC70-00354A	IPR-ITB WASHER SPRING;CLP-500,SUS304 CSP		SNA
	JC70-00391A	IPR-DEV BRKT DOCTOR;CLP-500,SECC,-,T1.2,		SNA
	JC70-00392A	IPR-DEV BRKT DOCTOR BK;CLP-500,SECC,-,T1		SNA
	JC70-00395A	IPR-DEV PLATE BIAS;CLP-500,C5210,-,T0.3,		SNA
	JC70-00396A	IPR-DEV PLATE FUSERBLE;CLP-500,C5201,-,T		SNA
	JC70-00398A	IPR-DEV PLATE BIAS DR BK;CLP-500,SUS304-		SNA
	JC70-00399A	IPR-DEV PLATE BIAS DR C;CLP-500,SUS304-C		SNA
	JC70-00402A	IPR-DEV PLATE BIAS SR;CLP-500,SUS304-CSP		SNA
	JC70-00403A	IPR-DEV PLATE BIAS SR BK;CLP-500,SUS304-		SNA
	JC70-00434A	IPR-PLATE CONTACT HVPS;CLP-500,C5210P,-,	S7033	SNA
	JC70-00435A	IPR-PLATE SPRING HVPS;CLP-500,BECU,-,T0.	S7034	SNA
	JC72-00463A	PMO-CAP CONNECTOR L;ML-6060A,POM,BLACK,-	Z0013	SA
	JC72-00465A	PMO-CAP CONNECTOR U;ML-6060A,POM,BLACK,-	Z0014	SA
	JC72-01013A	PMO-AUGER WASTE TONER;CLP-500,PC+GF20%,B		SNA
	JC72-01014A	PMO-BRKT FRAME FRONT;CLP-500,ABS+GF20%,B		SNA
	JC72-01015A	PMO-BRKT FRAME REAR;CLP-500,ABS+GF20%,IC		SNA
	JC72-01016A	PMO-COVER ROLL CHARGER;CLP-500,ABS,BLACK		SNA
	JC72-01017A	PMO-COVER WASTE TANK;CLP-500,ABS,BLACK,-		SNA
	JC72-01018A	PMO-OPC FLANGE DRUM;CLP-500,POM,WHITE,-,		SNA
	JC72-01019A	PMO-OPC FRAME BASE;CLP-500,ABS+GF20%,BLA		SNA
	JC72-01020A	PMO-GUIDE ERASER LAMP;CLP-500,ACRYL,TRP		SNA
	JC72-01021A	PMO-OPC HANDLE;CLP-500,ABS+GF20%,ICE GRE		SNA
	JC72-01022A	PMO-HOLDER CR FRONT;CLP-500,POM,BLACK,-,		SNA
	JC72-01023A	PMO-HOLDER CR REAR;CLP-500,POM,BLACK,-,D		SNA
	JC72-01024A	PMO-PUSH LOCKING;CLP-500,POM,BLACK,-,DEL		SNA
	JC72-01025A	PMO-SHUTTER WASTE TANK;CLP-500,ABS,BLACK		SNA
	JC72-01026A	PMO-OPC SOKET OEM;CLP-500,ABS,BLACK,-,HB		SNA
	JC72-01027A	PMO-ITB AUGER CLEAN;CLP-500,ABS+GF20%,BL		SNA
	JC72-01029A	PMO-ITB BUSH DRIVE F;CLP-500,POM,BLACK,-		SNA
	JC72-01030A	PMO-ITB BUSH DRIVE FIX;CLP-500,POM,BLACK		SNA

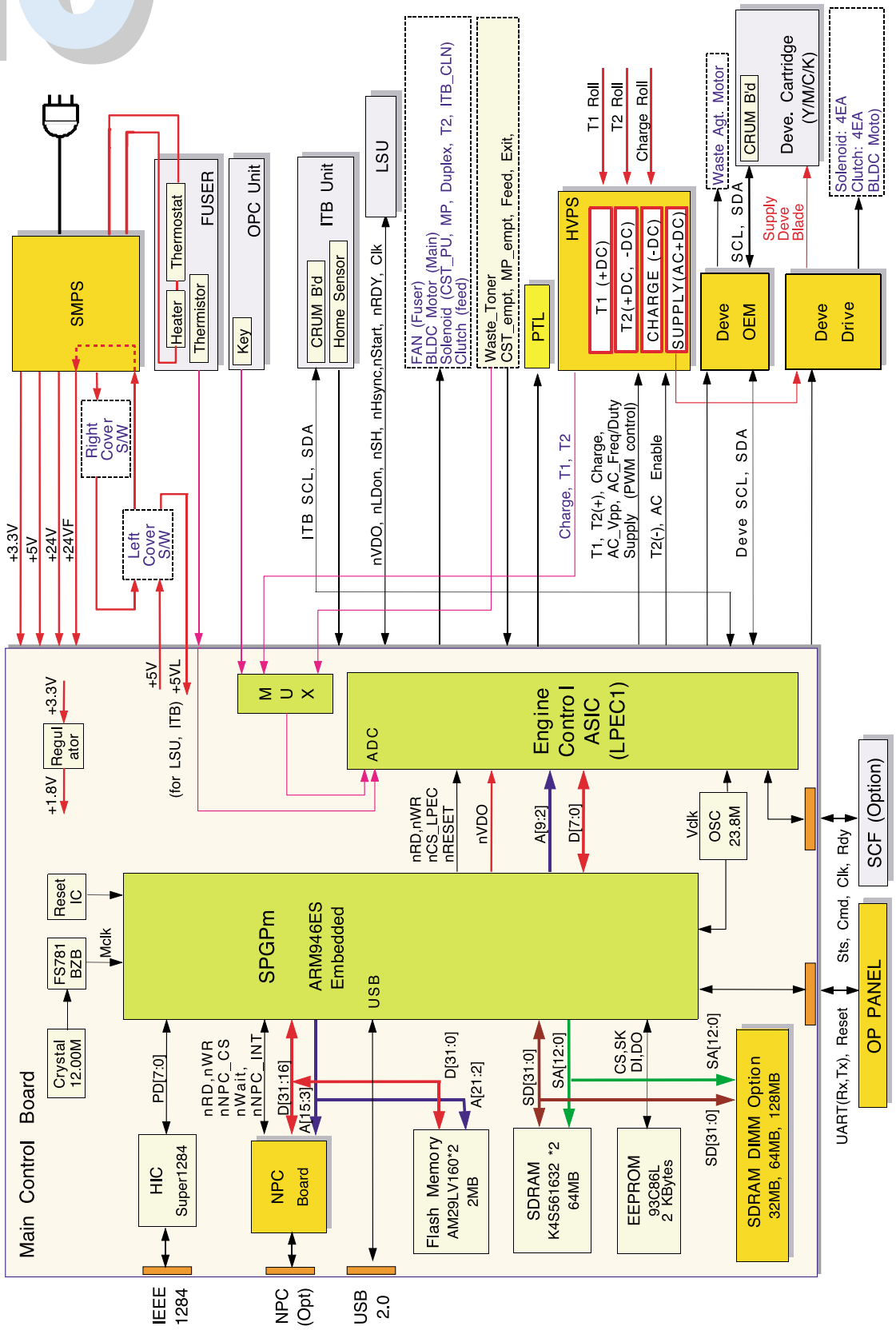
SA : Service Available, **SNA** : Service not Available

Draw#	Part Code	Description	Location	SNA
	JC72-01031A	PMO-ITB BUSH GUIDE CF;CLP-500,POM,WHITE,		SNA
	JC72-01032A	PMO-ITB BUSH GUIDE CR;CLP-500,POM,WHITE,		SNA
	JC72-01034A	PMO-ITB BUSH GUIDE DR;CLP-500,POM,BLACK,		SNA
	JC72-01035A	PMO-ITB BUSH NIP R;CLP-500,POM,BLACK,-,M		SNA
	JC72-01036A	PMO-ITB BUSH T1;CLP-500,POM,BLACK,-,DE85		SNA
	JC72-01037A	PMO-ITB BUSH TENSION;CLP-500,POM,BLACK,-		SNA
	JC72-01038A	PMO-ITB COVER LOWER;CLP-500,ABS+GF20%,BL		SNA
	JC72-01039A	PMO-ITB COVER MAIN;CLP-500,ABS+GF20%,BLA		SNA
	JC72-01040A	PMO-ITB COVER UNIT F;CLP-500,ABS,BLACK,-		SNA
	JC72-01041A	PMO-ITB COVER UNIT R;CLP-500,ABS,BLACK,-		SNA
	JC72-01042A	PMO-ITB GAP RING;CLP-500,POM,BROWN,-,500		SNA
	JC72-01043A	PMO-ITB GUIDE AUGER;CLP-500,PC/ABS,BLACK		SNA
	JC72-01044A	PMO-ITB G/BELT TENSION;CLP-500,POM,BLACK		SNA
	JC72-01045A	PMO-ITB HANDLE FIX;CLP-500,POM,BLACK,-,M		SNA
	JC72-01046A	PMO-ITB HANDLE UNIT;CLP-500,ABS,ICE GREE		SNA
	JC72-01047A	PMO-ITB HINGE BRKT BLADE;CLP-500,POM,BLA		SNA
	JC72-01048A	PMO-ITB HOLDER TOF;CLP-500,ABS,BLACK,-,H		SNA
	JC72-01051A	PMO-ITB LEVER BLADE;CLP-500,POM,BLACK,-,		SNA
	JC72-01052A	PMO-ITB POSITION UNIT F;CLP-500,PC/ABS,P		SNA
	JC72-01053A	PMO-ITB POSITION UNIT R;CLP-500,PC/ABS,I		SNA
	JC72-01054A	PMO-ITB SHUTTER AUGER;CLP-500,PC/ABS,BLA		SNA
	JC72-01088A	PMO-HOOK TR FRONT;CLP-500,POM,PUPPLE,-,M		SNA
	JC72-01095A	PMO-GAP RING;CLP-500,POM,BLACK,PI23.66,T		SNA
	JC72-01114A	PMO-DEV BUSH SLIDE;CLP-500,POM,BLACK,-,M		SNA
	JC72-01119A	PMO-DEV COVER BLACK;CLP-500,HIPS,BLACK,-		SNA
	JC72-01120A	PMO-DEV COVER CYAN;CLP-500,HIPS,BLACK,-,		SNA
	JC72-01121A	PMO-DEV COVER MAGENTA;CLP-500,HIPS,BLACK		SNA
	JC72-01122A	PMO-DEV COVER YELLOW;CLP-500,HIPS,BLACK,		SNA
	JC72-01123A	PMO-DEV FRAME;CLP-500,ABS+PC20%,BLACK,-,		SNA
	JC72-01124A	PMO-DEV FRAME BK;CLP-500,ABS+PC20%,BLACK		SNA
	JC72-01125A	PMO-DEV GAP RING;CLP-500,POM,WHITE,PI14.		SNA
	JC72-01126A	PMO-DEV GUIDE SUPPLY;CLP-500,PC+GF20%,BL		SNA
	JC72-01127A	PMO-DEV GUIDE SUPPLY BK;MLC-500,PC+GF20%		SNA
	JC72-01128A	PMO-DEV HOUSING BIAS;CLP-500,ABS,BLACK,-		SNA
	JC72-01129A	PMO-DEV HOUSING FUSERBLE;CLP-500,ABS,BLA		SNA
	JC72-01130A	PMO-DEV PLATE GEAR;CLP-500,POM,BLACK,-,M		SNA
	JC72-01131A	PMO-DEV PLATE GEAR BK;CLP-500,POM,BLACK,		SNA
	JC72-01132A	PMO-DEV TONER AGIATOR;CLP-500,PC,BLACK,-		SNA
	JC72-01133A	PMO-DEV TONER RECYCLE;CLP-500,PC,BLACK,-		SNA
	JC72-01175A	PMO-DEVE OPEN LINK;CLP-500,PC/ABS,BLACK,	O1078	SNA
	JC72-01198B	PMO-OPE KEY 1 CAP;CLP-510,ABS,G71312,-,-		SNA
	JC72-01218A	PMO-HOLDER ERASER;CLP-500,PP,BLACK,-,-,-	E3002	SA
	JC72-01219A	PMO-ITB COVER CLEAN LOW;CLP-500,ABS,BLAC		SNA
	JC72-01234A	PMO-DEVE CAP TONER;CLP-500,PP,BLACK,-,H5		SNA
	JC72-01264A	SPONGE-ITB BF;CLP-500,URETHAN SPONGE,-,T		SNA
	JC72-01265A	SPONGE-ITB BR;CLP-500,URETHAN SPONGE,-,T		SNA
	JC72-01266A	SPONGE-ITB GAP;CLP-500,URETHAN SPONGE,-,		SNA
	JC72-01268A	SPONGE-ITB SHEET;CLP-500,URETHAN SPONGE,		SNA
	JC72-01269A	SPONGE-ITB SR;CLP-500,URETHAN SPONGE,-,T		SNA
	JC72-01270A	SPONGE-ITB TOP_BOTTOM;CLP-500,URETHAN SP		SNA
	JC72-01271A	SPONGE-ITB BLADE L;CLP-500,URETHANE SPON		SNA
	JC72-01272A	SPONGE-ITB BF R;CLP-500,URETHAN SPONGE,-		SNA
	JC72-01273A	SPONGE-ITB BLADE R;CLP-500,URETHAN SPONG		SNA
	JC72-01274A	SPONGE-ITB LOWER;CLP-500,URETHAN SPONGE,		SNA
	JC72-01275A	SPONGE-ITB SHUTTER;CLP-500,URETHAN SPONG		SNA
	JC72-01276A	SPONGE-ITB SIDE;CLP-500,URETHAN SPONGE,-		SNA

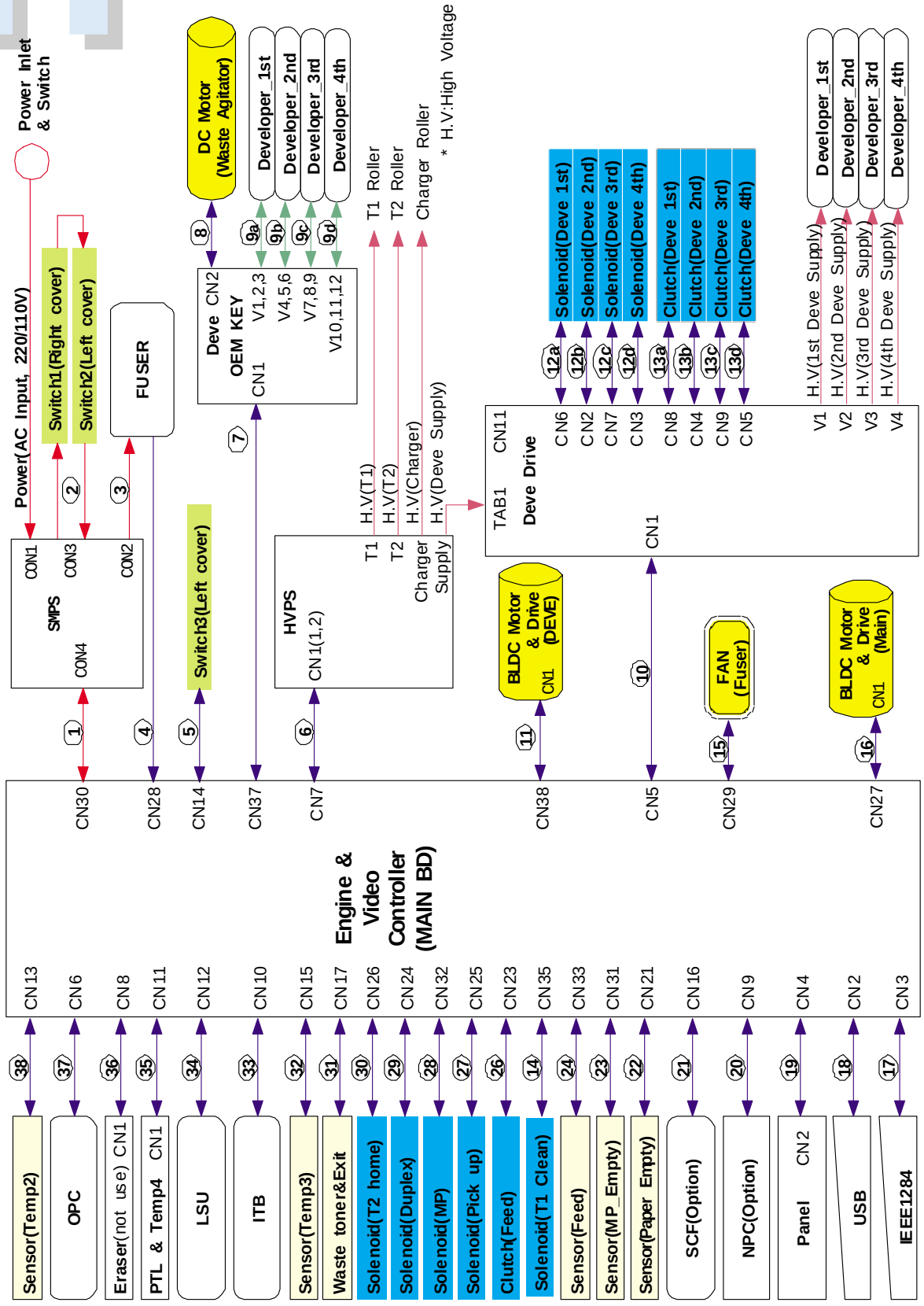
SA : Service Available, **SNA** : Service not Available

Draw#	Part Code	Description	Location	SNA
	JC72-01277A	SPONGE-ITB TOP;CLP-500,URETHAN SPONGE,-,		SNA
	JC73-00090A	RPR-RCT PAD PICKUP,MP;SCX-5100,SILICON,T	P2146	SA
	JC73-20902A	REX-CLEANING BLADE;ML-6000,URETHANE RUBB		SNA
	JC74-10901A	MPR-WASHER SUPPLY;ML-5000,POLY,ID4.1*OD1		SNA
	JC75-00032C	MEC-CHRAGER ROLLER;CLP-510,SEC,NBR+HYDRI	T2136	SA
	JC92-01450A	PBA SUB-ERASER;CLP-500,SEC,-,ERASER,LED,	E3001	SA
	JC92-01534B	PBA SUB-DEVE_BIAS_YK;CLP-500,SEC,-,DEVE_		SNA
	JC92-01551A	PBA SUB-DEVE_CRUM;CLP-500,SEC,KOREA,DEVE		SNA
	JC92-01551B	PBA SUB-DEVE_CRUM_M;CLP-500,SEC,KOREA,DE		SNA
	JC92-01551C	PBA SUB-DEVE_CRUM_C;CLP-500,SEC,KOREA,DE		SNA
	JC92-01551D	PBA SUB-DEVE_CRUM_K;CLP-500,SEC,KOREA,DE		SNA
	JC92-01569A	PBA SUB-GINKGO_ITB;CLP-500,SEC,KOREA,GIN		SNA
	JC92-01632A	PBA SUB-DRIVER_BB_PLUS;CLP-510,SEC,KOREA	M2011	SA
	JC96-03213A	ELA HOU-MAIN LINE;CLP-510,SEC,EXPORT,-,-		SNA
	JC96-03274A	ELA HOU-ITB_DRAW;CLP-510,KOREA,KOREA,ITB		SNA
	JC97-01819A	MEA UNIT-SUS BLADE BLACK;CLP-500,-,SECC+		SNA
	JC97-01820A	MEA UNIT-SUS BLADE COLOR;CLP-500,-,SECC+		SNA
	JC97-01821A	MEA UNIT-WASTE TONER TANK;CLP-500,SEC,EX	T2130	SA
	JC97-01828A	MEA UNIT-DUPLEX;CLP-500,SEC,EXPORT,-,-,-	D0010	SA
	JC97-01835A	MEA UNIT-CLEANING BLADE;CLP-500,OPC,SECC		SNA
	JC97-01836A	MEA UNIT-CLEANING BLADE;CLP-500,ITB,SECC		SNA
	JC97-01874A	MEA UNIT-OPC FLANGE;CLP-500,SEC,OPC FLAN		SNA
	JC99-01744Q	INA-ACCESSORY(XAA);CLP-510/XAA,SAMSUNG,A		SNA
	JC99-01810A	PAA MAIN-PACKING;CLP-510,SAMSUNG,EXPORT,		SNA
	JC99-01813A	INA-ACCESSORY(XAA);CLP-510/XAA,SAMSUNG,A		SNA
	JC99-01824J	PAA-LABEL_XBH;CLP-510/XBH,SAMSUNG,BIGBAN		SNA
	JG07-20001A	LCD;SF4000,UC-162937-TNAR5-A,BLK/G	L3015	SA
	JK72-00058A	PCT-SILP WASHER;SRP-350,P.A+GRAPHITE,T0.		SNA

10. Block Diagram



11. Connection Diagram



< Signal Name Table >

* Dir : Signal direction, NC : No Connection
* <- : same signal_name

① Main BD(CN30) ⟷ SMPS(CON4)

Pin	Signal Name	Dir	Pin	Signal Name
1	+24VF	←	2	+24VF
2	+24VF	←	1	+24VF
3	+24VF	←	4	+24VF
4	+24VF	←	3	+24VF
5	AGND		6	GND
6	AGND		5	GND
7	AGND		8	GND
8	AGND		7	GND
9	+24V	←	10	+24V
10	+24V	←	9	+24V
11	AGND		12	GND
12	AGND		11	GND
13	+3.3V	←	14	+3.3V
14	+3.3V	←	13	+3.3V
15	+3.3V	←	16	+3.3V
16	+3.3V	←	15	+3.3V
17	DGND		18	GND
18	DGND		17	GND
19	DGND		20	GND
20	DGND		19	GND
21	+5V	←	22	+5V
22	+5V	←	21	+5V
23	DGND		24	GND
24	DGND		23	GND
25	nFUSERON	→	26	<-
26	NC		25	NC

② SMPS(CON3) ⟷ Switch

Pin	Signal Name	Dir	Pin	Signal Name
1	+24V	→		<-
2	NC			<-
3	+24VF	←		<-

③ SMPS(CON2) ⟷ Fuser Unit

Pin	Signal Name	Dir	Pin	Signal Name
1	CON2	→		<-
2	NC			<-
3	5096-02C	→		<-

④ Main BD(CN28) ⟷ Fuser Unit

Pin	Signal Name	Dir	Pin	Signal Name
1	AN_FUSER1_OUT	←		<-
2	AN_FUSER1_OUT2	←		<-

⑤ Main BD(CN14) ⟷ Switch(Left cover)

Pin	Signal Name	Dir	Pin	Signal Name
1	+5V	→		<-
2	+5VL	←		<-

Pin	Signal Name	Dir	Pin	Signal Name
2	+24VF	→	1	24V
4	AGND		3	GND
6	PWM_AC_VPP	→	5	AC_Vpp_PWM
8	PWM_T2	→	7	T2_PWM
10	PWM_CHARGE	→	9	CHARGE_PWM
12	ENB_DEVE_AC	→	11	DEV_REM_PWM
14	A_READ_T1	←	13	T1_READ
16	GNDD	→	15	GNDD
Main BD(CN7) ⟷ HVPS(CN1-2)				
1	+24VF	→	2	24V
3	AGND		4	GND
5	ENB_T2	→	6	T2_EN
7	PWM_AC	→	8	AC_PWM
9	PWM_T1	→	10	T1_PWM
11	PWM_DEVE	→	12	DEVE_PWM
13	A_READ_CHA	←	14	CHARGE_READ
15	+5V	→	16	+5V

⑦ Main Board(CN37) ↔ Deve OEM Key(CN1)

Pin	Signal Name	Dir	Pin	Signal Name
1	AGND	→	2	AGND
2	+24VF	→	1	+24VF
3	nWST_AGT	→	4	nWST_AGT
4	A_WST_AGT	←	3	A_WST_AGT
5	+5VL	→	6	+5VL
6	Deve_Crum_SCL	→	5	Deve_Crum_SCL
7	Deve_Crum_SDA	↔	8	Deve_Crum_SDA
8	AGND	→	7	AGND

⑧ Deve OEM Key(CN2) ↔ DC Motor (Waste Agitator)

Pin	Signal Name	Dir	Pin	Signal Name
1	nWST_AGT	→		<-
2	NC			<-
3	SENSE_AGT	←		<-

⑨a Deve OEM Key ↔ Deve Cartridge(1st)

Pin	Signal Name	Dir	Pin	Signal Name
V1	DEVE_CRUM_SDA	↔		DEVE_CRUM_SDA
V2	DGND	→		DGND
V3	SCL_OUT2	↔		SCL_OUT1

⑨b Deve OEM Key ↔ Deve Cartridge(2nd)

Pin	Signal Name	Dir	Pin	Signal Name
V4	DEVE_CRUM_SDA	↔		DEVE_CRUM_SDA
V5	DGND	→		DGND
V6	SCL_OUT2	↔		SCL_OUT2

⑨c Deve OEM Key ↔ Deve Cartridge(3rd)

Pin	Signal Name	Dir	Pin	Signal Name
V7	DEVE_CRUM_SDA	↔		DEVE_CRUM_SDA
V8	DGND	→		DGND
V9	SCL_OUT2	↔		SCL_OUT3

⑨d Deve OEM Key ↔ Deve Cartridge(4th)

Pin	Signal Name	Dir	Pin	Signal Name
V10	DEVE_CRUM_SDA	↔		DEVE_CRUM_SDA
V11	DGND	→		DGND
V12	SCL_OUT2	↔		SCL_OUT4

⑩ Main BD(CN5) ↔ Deve Drive(CN1)

Pin	Signal Name	Dir	Pin	Signal Name
1	AGND		2	AGND
2	+24VF	→	1	24V
3	AGND		4	AGND
4	+24VF	→	3	24V
5	nSOL_DEVE_1ST	→	6	AGND
6	nSOL_DEVE_2ND	→	5	24V
7	nSOL_DEVE_3RD	→	8	DGND
8	nSOL_DEVE_4TH	→	7	5V
9	nCLT_DEVE_1ST	→	10	nSOL_DEVE_1ST
10	nCLT_DEVE_2ND	→	9	nSOL_DEVE_2ND
11	nCLT_DEVE_3RD	→	12	nSOL_DEVE_3RD
12	nCLT_DEVE_4TH	→	11	nSOL_DEVE_4TH

⑪ Main Board ↔ BLDC Motor(Deve)

Pin	Signal Name	Dir	Pin	Signal Name
1	24V	→	1	+24V
2	24V	→	2	+24V
3	AGND		3	PGND
4	AGND		4	PGND
5	DGND		5	SGND
6	5V	→	6	+5V
7	START	→	7	START
8	READY	←	8	READY
9	CLOCK	→	9	CLOCK
			10	CW/CCW

12a Deve Drive(CN6)↔Solenoid(Deve 1st)

Pin	Signal Name	Dir	Pin	Signal Name
1	nSOL_DEV_1ST	→		<-
2	NC			<-
3	AGND			<-

12b Deve Drive(CN2)↔Solenoid(Deve 2nd)

Pin	Signal Name	Dir	Pin	Signal Name
1	nSOL_DEV_2ND	→		<-
2	NC			<-
3	AGND			<-

12c Deve Drive(CN7)↔Solenoid(Deve 3rd)

Pin	Signal Name	Dir	Pin	Signal Name
1	nSOL_DEV_3RD	→		<-
2	NC			<-
3	AGND			<-

12d Deve Drive(CN3)↔Solenoid(Deve 4th)

Pin	Signal Name	Dir	Pin	Signal Name
1	nSOL_DEV_4TH	→		<-
2	NC			<-
3	AGND			<-

13a Deve Drive(CN8)↔Clutch(Deve 1st)

Pin	Signal Name	Dir	Pin	Signal Name
1	nCLT_DEV_1ST	→		<-
2	NC			<-
3	AGND			<-

13b Deve Drive(CN4)↔Clutch(Deve 2nd)

Pin	Signal Name	Dir	Pin	Signal Name
1	nCLT_DEV_2ND	→		<-
2	NC			<-
3	AGND			<-

13c Deve Drive(CN9)↔Clutch(Deve 3rd)

Pin	Signal Name	Dir	Pin	Signal Name
1	nCLT_DEV_3RD	→		<-
2	NC			<-
3	AGND			<-

13d Deve Drive(CN5)↔Clutch(Deve 4th)

Pin	Signal Name	Dir	Pin	Signal Name
1	nCLT_DEV_4TH	→		<-
2	NC			<-
3	AGND			<-

14 Main Board(CN35)↔Solenoid(T1 clean)

Pin	Signal Name	Dir	Pin	Signal Name
1	nSOL_T1_CLN	→		<-
2	NC			<-
3	AGND			<-

15 Main BD(CN29)↔Fan Motor(Fuser)

Pin	Signal Name	Dir	Pin	Signal Name
1	nFAN_FUSER	→		<-
2	NC			<-
3	+24VF	→		<-

16 Main BD(CN27)↔BLDC Motor(Main)

Pin	Signal Name	Dir	Pin	Signal Name
1	+24VF	→	1	+24V
2	+24VF	→	2	+24V
3	AGND		3	PGND
4	AGND		4	PGND
5	DGND		5	SGND
6	+5V	→	6	+5V
7	nBLDC_START1	→	7	START
8	nBLDC_RDY1	←	8	READY
9	BLDC_CLK1	→	9	CLOCK
10	DGND		10	CW/CCW

⑰ Main BD(CN3)↔IEEE1284 Port

Pin	Signal Name	Dir	Pin	Signal Name
1	nSTB	←		<-
2	DATA0	↔		<-
3	DATA1	↔		<-
4	DATA2	↔		<-
5	DATA3	↔		<-
6	DATA4	↔		<-
7	DATA5	↔		<-
8	DATA6	↔		<-
9	DATA7	↔		<-
10	nACK	→		<-
11	BUSY	→		<-
12	PERROR	→		<-
13	SELECT	→		<-
14	nAUTOFD	←		<-
15	NC			<-
16	DGND			<-
17	AGND			<-
18	5V1			<-
19	DGND			<-
20	DGND			<-
21	DGND			<-
22	DGND			<-
23	DGND			<-
24	DGND			<-
25	DGND			<-
26	DGND			<-
27	DGND			<-
28	DGND			<-
29	DGND			<-
30	DGND			<-
31	nINIT	←		<-
32	nFAULT	→		<-
33	NC			<-
34	NC			<-
35	NC			<-
36	nSELECTIN	←		<-

⑱ Main BD(CN2)↔USB Port

Pin	Signal Name	Dir	Pin	Signal Name
1	VBUS_2270	←		VBUS
2	DN	↔		D-
3	DP	↔		D+
4	DGND			AGND
5	AGND			FGND
6	AGND			FGND

⑲ Main BD(CN4)↔Panel(CN2)

Pin	Signal Name	Dir	Pin	Signal Name
1	DGND		1	DGND
2	+5V	→	2	VCC
3	PANEL_TX	→	3	OPE_RXD
4	nRST_PANEL	→	4	/OPE_RST
5	PANEL_RX	←	5	OPE_TXD

⑳ Main BD(CN9) ↔ NPC(J1) (Network Print Card)

Pin	Signal Name	Dir	Pin	Signal Name
1	+3.3V	→	1	VDD3
2	+3.3V	→	2	VDD3
3	DGND		3	GND
4	nNPC_CS	→	4	nXPCS
5	DATA(31)	↔	5	XPData(31)
6	DATA(30)	↔	6	XPData(30)
7	DATA(29)	↔	7	XPData(29)
8	DGND		8	GND
9	DATA(28)	↔	9	XPData(28)
10	DATA(27)	↔	10	XPData(27)
11	DATA(26)	↔	11	XPData(26)
12	DGND		12	GND
13	DATA(25)	↔	13	XPData(25)
14	DATA(24)	↔	14	XPData(24)
15	nNPC_INT	←	15	nXIRQ_OUT
16	DGND		16	GND
17	A_ADDR(5)	→	17	XPAddr(3)
18	A_ADDR(4)	→	18	XPAddr(2)
19	A_ADDR(3)	→	19	XPAddr(1)
20	+3.3V	→	20	VDD3
21	NC		21	NC
22	DATA(23)	↔	22	XPData(23)
23	DATA(22)	↔	23	XPData(22)
24	NC		24	NC
25	DATA(21)	↔	25	XPData(21)
26	NC		26	NC
27	DATA(20)	↔	27	XPData(20)
28	A_ADDR(15)	→	28	XPAddr(13)
29	DATA(19)	↔	29	XPData(19)
30	A_ADDR(14)	→	30	XPAddr(12)
31	DATA(18)	↔	31	XPData(18)
32	A_ADDR(13)	→	32	XPAddr(11)
33	DATA(17)	↔	33	XPData(17)
34	A_ADDR(12)	→	34	XPAddr(10)
35	DATA(16)	↔	35	XPData(16)
36	A_ADDR(11)	→	36	XPAddr(9)
37	A_ADDR(6)	→	37	XPAddr(4)
38	A_ADDR(10)	→	38	XPAddr(8)
39	nNPC_RST	→	39	nRESET_P
40	A_ADDR(9)	→	40	XPAddr(7)
41	nWAIT	←	41	nXPWAIT
42	A_ADDR(8)	→	42	XPAddr(6)
43	NC		43	NC
44	A_ADDR(7)	→	44	XPAddr(5)
45	NC		45	NC
46	NC		46	NC
47	NC		47	NC
48	DGND		48	GND
49	NC		49	NC
50	nRD	→	50	nXPRE
51	nWR	→	51	nXPWE
52	DGND		52	GND
53	NC		53	NC
54	NC		54	NC
55	NC		55	NC
56	DGND		56	GND
57	nPRT_IRQ	→	57	nXIRQ_IN
58	DGND		58	GND
59	DGND		59	GND
60	DGND		60	GND

㉑ Main BD(CN16) ↔ SCF Unit(CN9) (Secondary Cassette Feeder)

Pin	Signal Name	Dir	Pin	Signal Name
1	+3.3V	→	1	3.3V
2	STS_SCF	←	2	SCF_STS
3	CMD_SCF	→	3	SCF_CMD
4	CLK_SCF	→	4	SCF_CLK
5	RDY_SCF	←	5	SCF_RDY
6	+24V	→	6	24VS
7	DGND		7	DGND
8	AGND		8	AGND

㉒ Main BD(CN21) ↔ Sensor(Paper Empty)

Pin	Signal Name	Dir	Pin	Signal Name
1	+3.3V	→	1	<-
2	nS_EMPT	←	2	<-
3	DGND		3	<-
4	NC		4	<-

㉓ Main BD(CN31) ↔ Sensor(MP Empty)

Pin	Signal Name	Dir	Pin	Signal Name
1	+3.3V	→	1	<-
2	nS_MP_EMPT	←	2	<-
3	DGND		3	<-
4	NC		4	<-

㉔ Main BD(CN33)↔Sensor(Feed)

Pin	Signal Name	Dir	Pin	Signal Name
1	+3.3V	→	1	<-
2	nS_FEED	←	2	<-
3	DGND		3	<-

㉖ Main BD(CN23)↔Clutch(Feed)

Pin	Signal Name	Dir	Pin	Signal Name
1	+24VF	→		<-
2	nCLT_FEED	→		<-

㉗ Main BD(CN25)↔Solenoid(Pick up)

Pin	Signal Name	Dir	Pin	Signal Name
1	+24VF	→		<-
2	nSOL_PICKUP	→		<-

㉘ Main BD(CN32)↔Solenoid(MP)

Pin	Signal Name	Dir	Pin	Signal Name
1	+24VF	→		<-
2	nSOL_MP	→		<-
3	NC			<-

㉙ Main BD(CN24)↔Solenoid(Duplex)

Pin	Signal Name	Dir	Pin	Signal Name
1	+24VF	→		<-
2	nSOL_DUP	→		<-

㉚ Main BD(CN26)↔Solenoid(T2 home)

Pin	Signal Name	Dir	Pin	Signal Name
1	+3.3V	→	1	<-
2	NC		2	<-
3	nSOL_T2	→	3	<-

㉛ Main BD(CN17)↔Sensor(Waste Toner) & Exit Sensor

Pin	Signal Name	Dir	Pin	Signal Name
1	+3.3V	→	1	<-
2	DGND		2	<-
3	nS_TONER_RX	←	1	<-
4	DGND		2	<-
5	+3.3V	→	1	<-
6	nS_EXIT	←	2	<-
7	DGND		3	<-

㉜ Main BD(CN15)↔Sensor(Temperature)

Pin	Signal Name	Dir	Pin	Signal Name
1	A_TEMP	←	1	<-
2	GNDA		2	<-

㉝ Main BD(CN10)↔ITB Unit(Drawer Connector on Frame)

Pin	Signal Name	Dir	Pin	Signal Name
1	+5VL	→	J7	<-
2	nS_ITB_HOME	←	J6	<-
3	DGND		J5	<-
4	A_ITB_HOME	←	J4	<-
5	DGND		J3	<-
6	ITB_CRUM_SCL	→	J14	<-
7	ITB_CRUM_SDA	←	J13	<-

㉞ Main BD(CN12) ↔ LSU

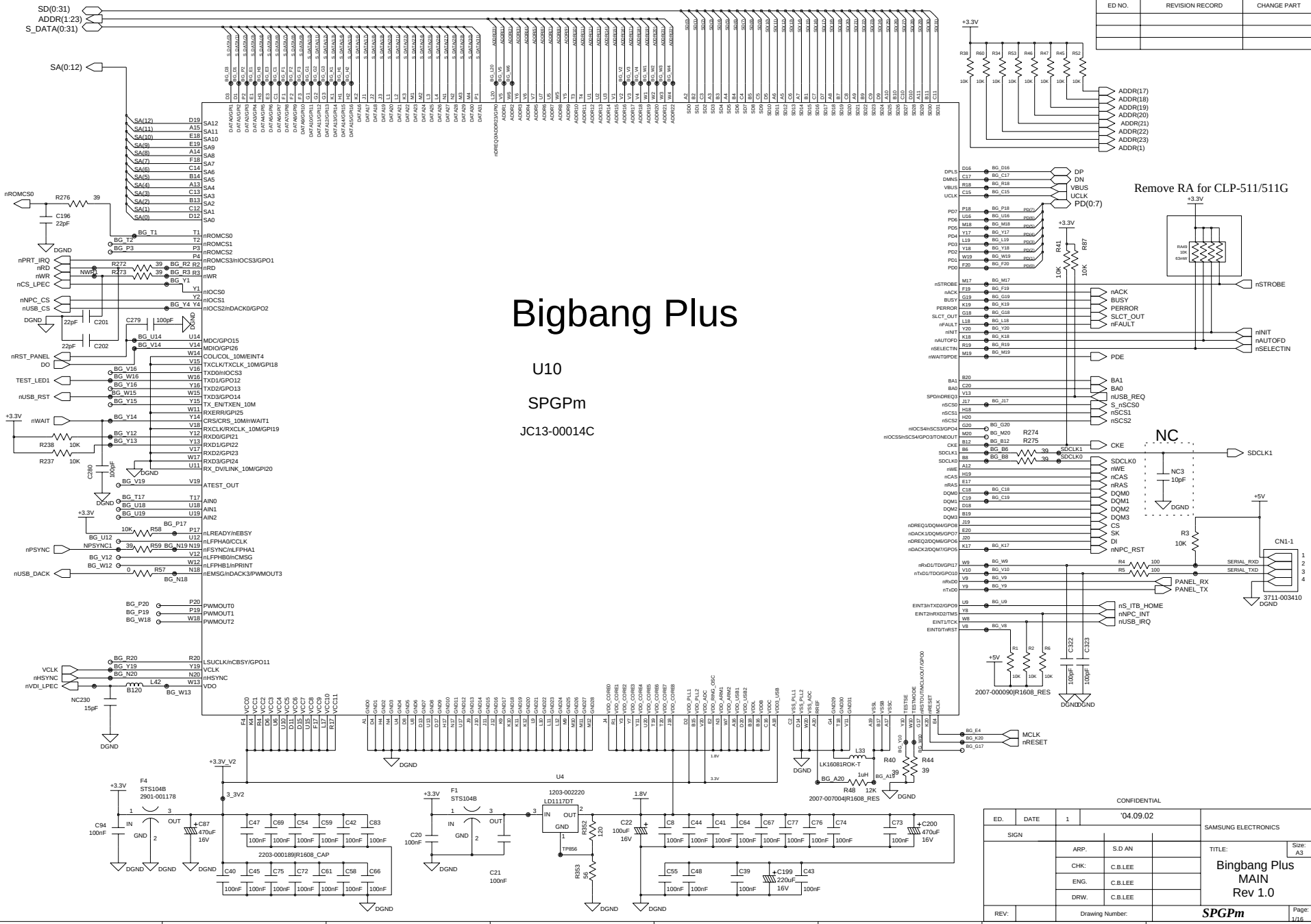
Pin	Signal Name	Dir	Pin	Signal Name
				* LD Part
1	nHSYNC	→	1	*HSYNC
2	+5VL	→	2	+5V
3	DGND		3	GND
4	nLDON_LSU	→	4	*LD ON
5	VDO_LSU+	→	5	*VIDEO+
6	VDO_LSU-	→	6	*VIDEO-
7	nSH_LSU	→	7	*S/H
				* Motor Driver
8	CLK_LSU	→	1	CLK
9	nRDY_LSU	←	2	*READY
10	nSTART_LSU	→	3	*START
11	AGND		4	GND
12	+24V	→	5	VCC

㉟ Main BD(CN11) ↔ PTL(CN1)&Temp

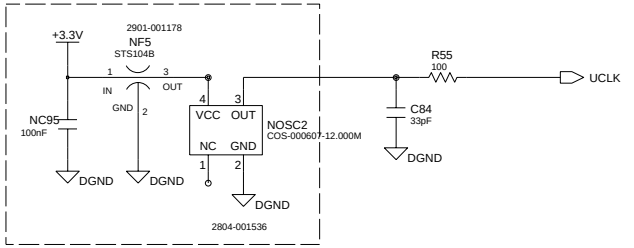
Pin	Signal Name	Dir	Pin	Signal Name
1	+5V	→	1	<-
2	EN_ERASER	→	2	<-
3	A_TEMP2	←	1	<-
4	GNDA		3	<-

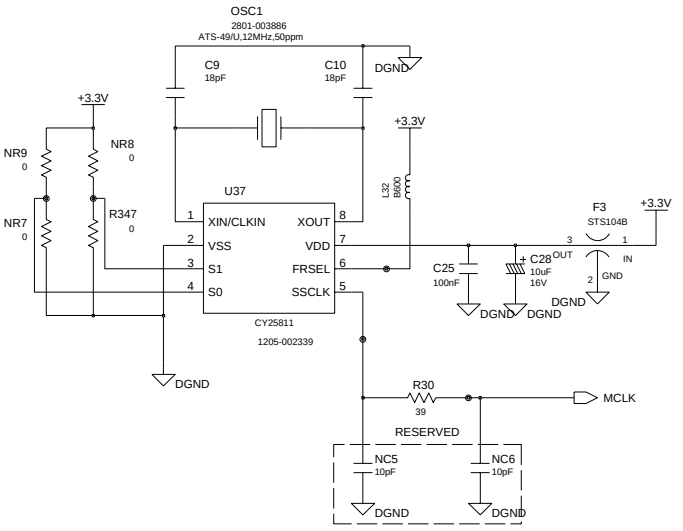
㊲ Main BD(CN6) ↔ OPC Unit

Pin	Signal Name	Dir	Pin	Signal Name
1	A_OPC_KEY	←		<-
2	DGND			<-


Bigbang Plus
U10
SPGPm
JC13-00014C
Remove RA for CLP-511/511G
NC
SD(0:31)
ADDR(1:23)
S_DATA(0:31)
SA(0:12)
nROMCS0
nPRT_IRQ
nRD
nWR
nCS_LPEC
nNPC_CS
nUSB_CS
nRST_PANEL
DO
TEST_LED1
nUSB_RST
nWAIT
nPSYNC
nUSB_DACK
VCLK
nHSYNC
nVDI_LPEC
nROMCS1
nROMCS2
nROMCS3/nIOCS3/GPO1
nIOCS0
nIOCS1
nIOCS2/nDACK0/GPO2
MDC/GPO15
MDIO/GPI26
COL/COL_10M/EINT4
TXCLK/TXCLK_10M/GPI18
TXD0/nIOCS3
TXD1/GPO12
TXD2/GPO13
TXD3/GPO14
TX_EN/TXEN_10M
EXERR/GPI25
CRS/CRS_10M/nWAIT1
RXCLK/RXCLK_10M/GPI19
RXD0/GPI21
RXD1/GPI22
RXD2/GPI23
RXD3/GPI24
RX_DV/LINK_10M/GPI20
ATEST_OUT
AIN0
AIN1
AIN2
nLREADY/nEBSY
nLFPHA0/CCLK
nFSYNC/nLFPHA1
nLFPHB0/nCMSG
nLFPHB1/nPRINT
nEMSG/nDACK3/PWMOUT3
PWMOUT0
PWMOUT1
PWMOUT2
LSUCLK/nCBSY/GPO11
VCLK
nHSYNC
nDVO
DP
DN
VBUS
UCLK
PD(0:7)
nSTROBE
nACK
BUSY
PERROR
SLCT_OUT
nFAULT
nINIT
nAUTOFD
nSELECTIN
PDE
BA1
BA0
nUSB_REQ
S_nSCS0
nSCS1
nSCS2
nIOCS4/nSCS3/GPO4
nIOCS5/nSCS4/GPO3/TONEOUT
CKE
SDCLK1
SDCLK0
nWE
nCAS
nRAS
DQM0
DQM1
DQM2
DQM3
CS
SK
DI
nNPC_RST
nRxD1/TDI/GPI17
nTxD1/TDO/GPO10
nRxD0
nTxD0
EINT3/nTXD2/GPO9
EINT2/nRXD2/TMS
EINT1/TCK
EINT0/TnRST
nS_ITB_HOME
nNPC_INT
nUSB_IRQ
MCLK
nRESET
ADDR(17)
ADDR(18)
ADDR(19)
ADDR(20)
ADDR(21)
ADDR(22)
ADDR(23)
ADDR(1)
SERIAL_RXD
SERIAL_TXD
PANEL_RX
PANEL_TX
3711-003410
2007-000090|R1608_RES
2007-007004|R1608_RES
2203-000189|R1608_CAP
LK16081ROK-T
LD1117DT
STS104B
2901-001178
2007-000090|R1608_RES
ED NO.
REVISION RECORD
CHANGE PART
CONFIDENTIAL
SAMSUNG ELECTRONICS
ED.
DATE
'04.09.02
SIGN
ARP.
S.D AN
CHK:
C.B.LEE
ENG.
C.B.LEE
DRW.
C.B.LEE
TITLE:
Bingbang Plus
MAIN
Rev 1.0
Size: A3
REV:
Drawing Number:
SPGPm
Page: 1/16

ED NO.	REVISION RECORD	CHANGE PART

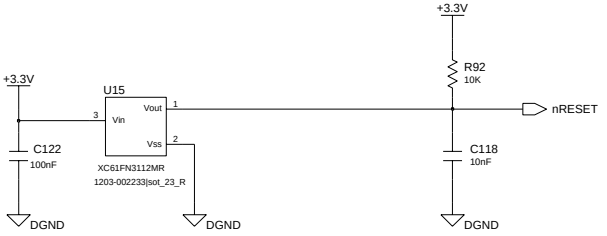




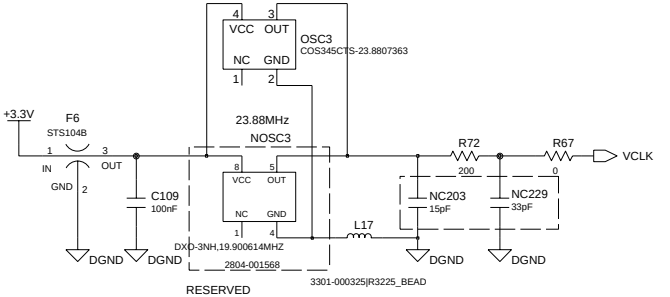
MHz	FRSEL	S1=0 S0=0	S1=0 S0=M	S1=0 S0=1	S1=M S0=0
12-14	1	1.2%	0.9%	0.5%	0.4%

* M= Floating

[MAIN SYSCLK]



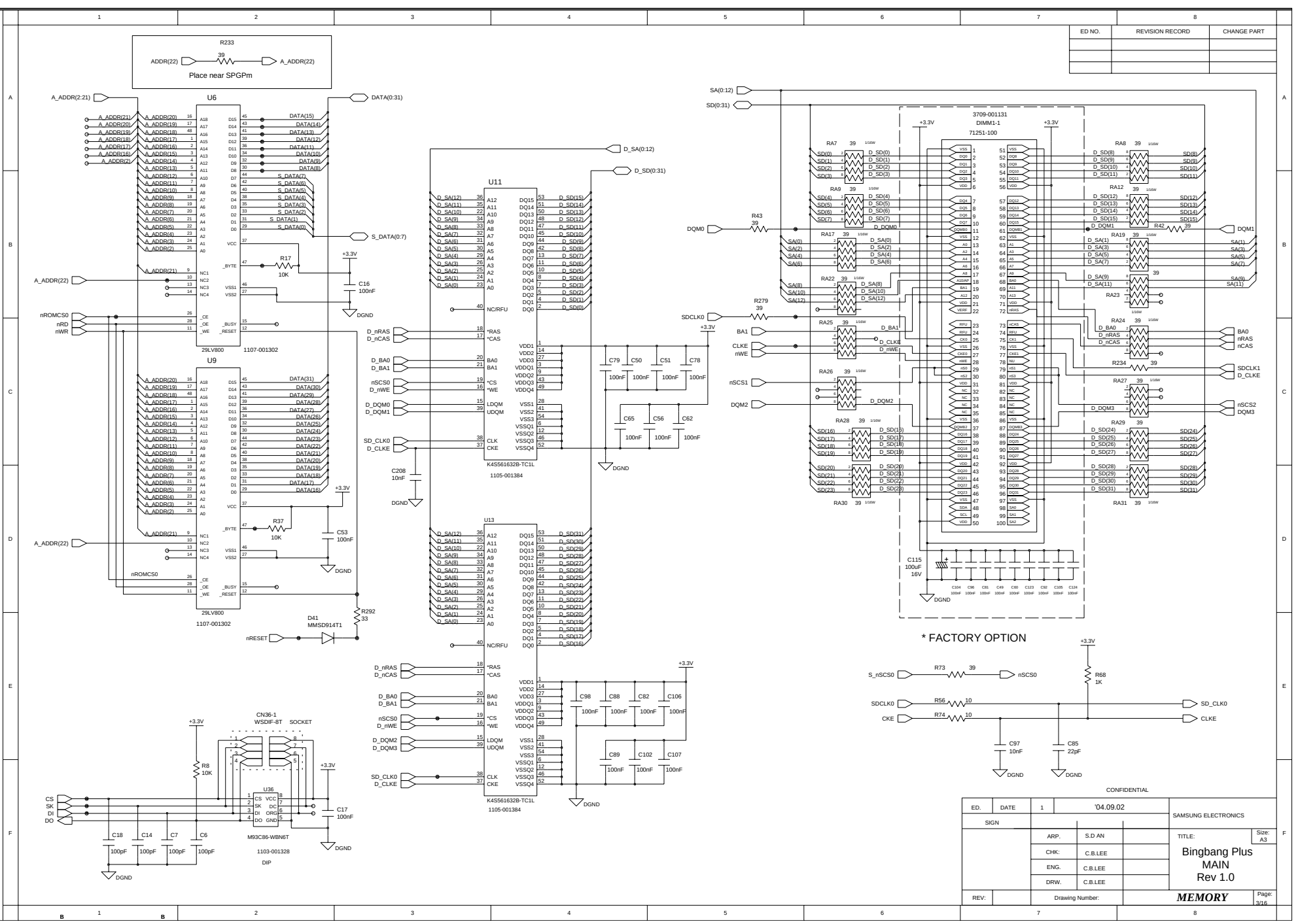
[RESET]



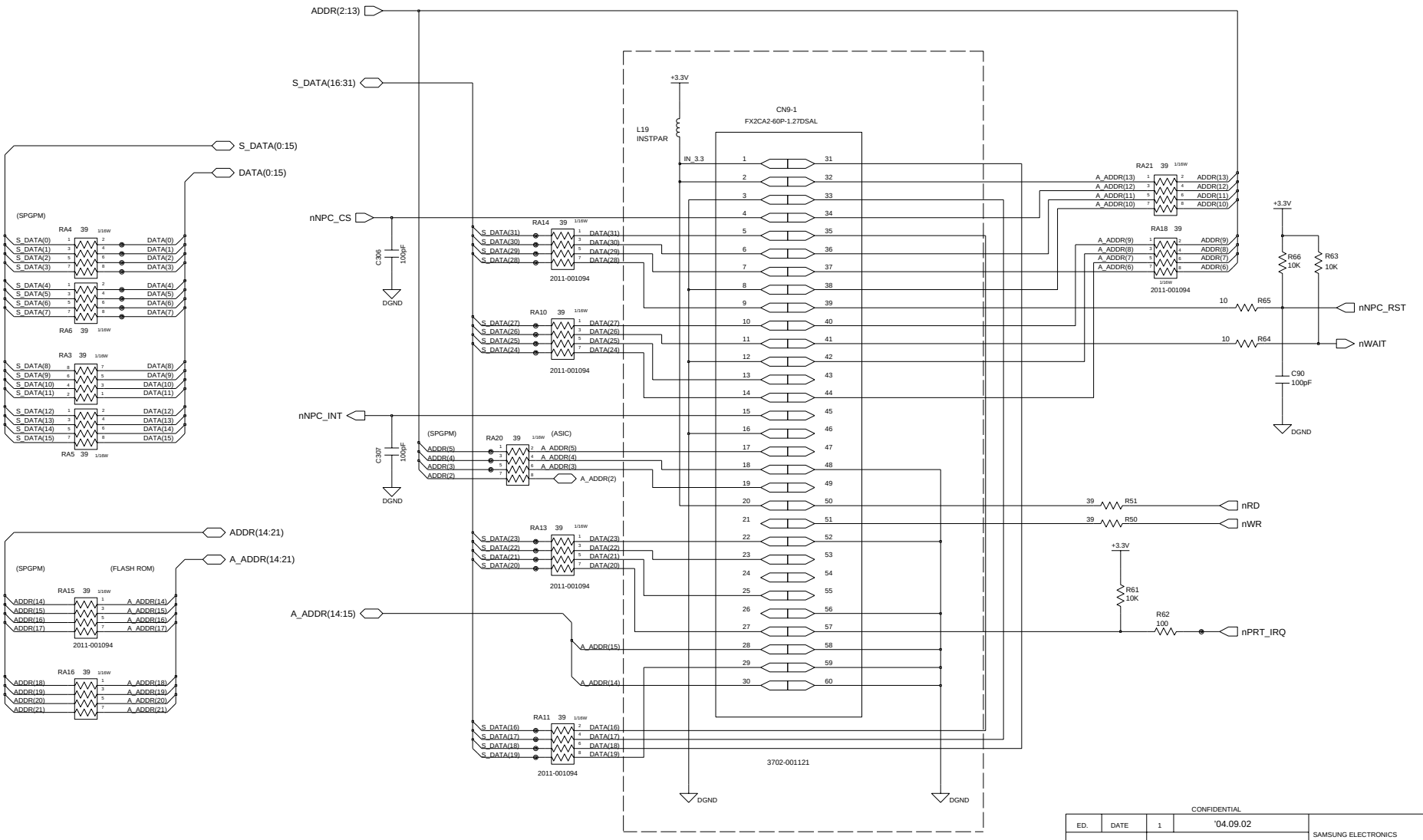
[VCLK SYSCLK]

CONFIDENTIAL

ED.	DATE	1	'04.09.02	SAMSUNG ELECTRONICS	
SIGN					
		ARP.	S.D AN	TITLE:	Size: A3
		CHK:	C.B.LEE	Bingbang Plus MAIN Rev 1.0	
		ENG.	C.B.LEE		
		DRW.	C.B.LEE		
REV:		Drawing Number:		***RESET & CLK***	Page: 2/16


R233
ADDR(22)
39
A_ADDR(22)
Place near SPGPm
U6
U9
U11
U13
29LV800
1107-001302
K4S561632B-TC1L
1105-001384
U36
M93C86-WBN6T
1103-001328
CN36-1
WSDIF-8T
SOCKET
DIP
3709-001131
DIMM1-1
71251-100
* FACTORY OPTION
CONFIDENTIAL
SAMSUNG ELECTRONICS
Bingbang Plus
MAIN
Rev 1.0
MEMORY
'04.09.02
ED NO.
REVISION RECORD
CHANGE PART

ED NO.	REVISION RECORD	CHANGE PART



* FACTORY OPTION

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ED.	DATE		
		1	'04.09.02
SIGN			
	ARP.	S.D AN	
	CHK:	C.B.LEE	
	ENG.	C.B.LEE	
	DRW.	C.B.LEE	

SAMSUNG ELECTRONICS

TITLE: Bingbang Plus MAIN Rev 1.0

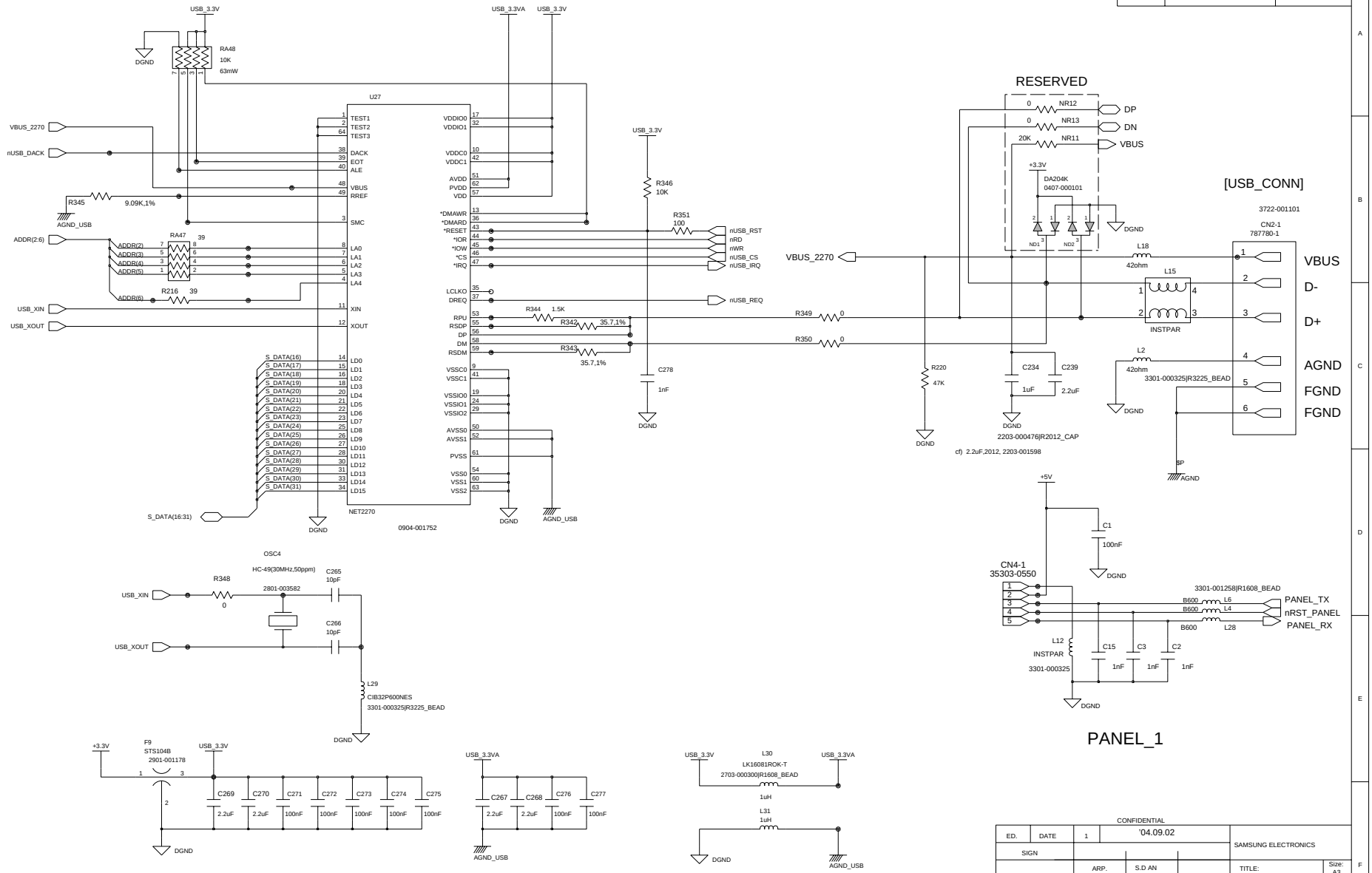
Size: A3

REV:

Drawing Number: ***Network Interface***

Page: 4/16

ED NO.	REVISION RECORD	CHANGE PART

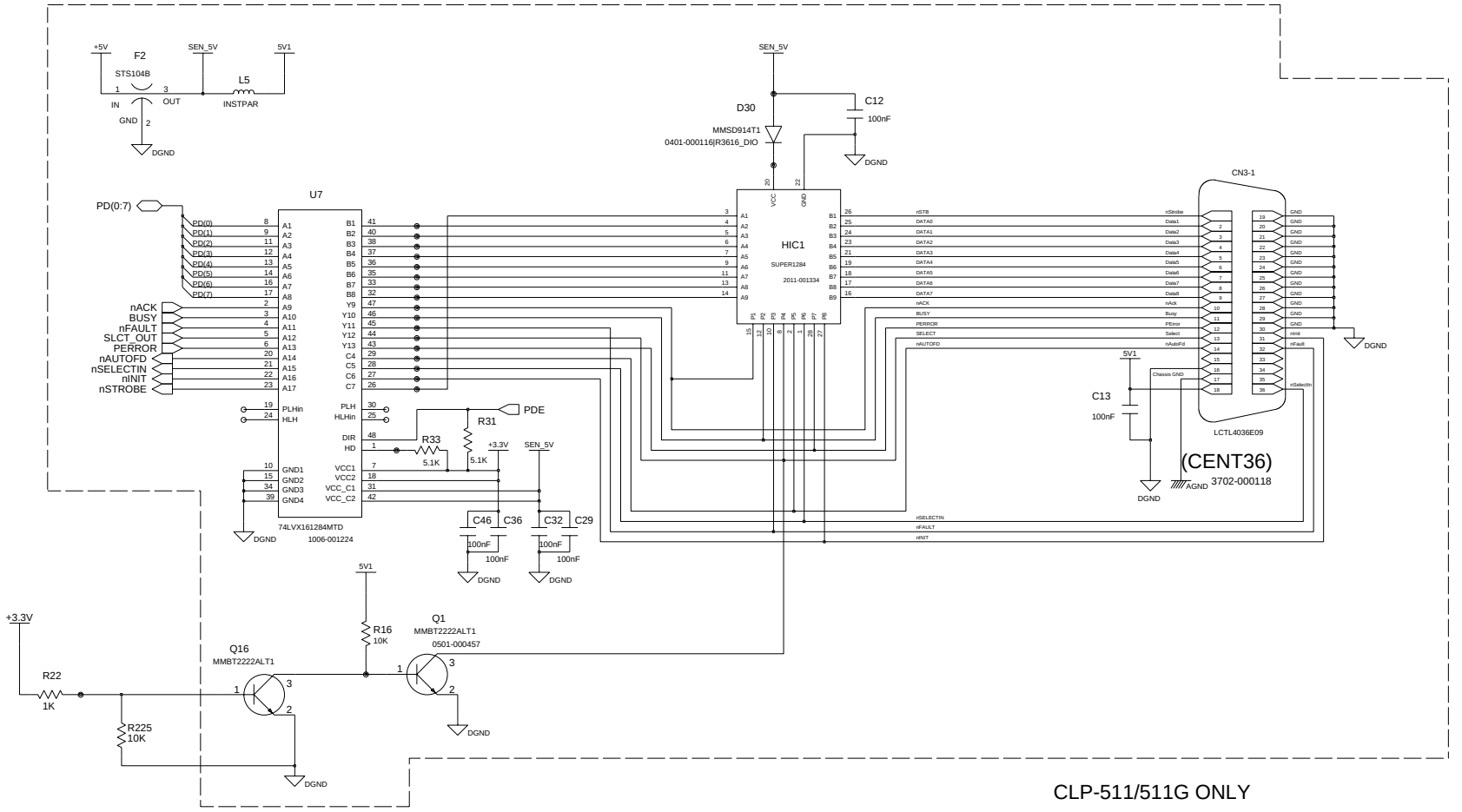


PANEL_1

CONFIDENTIAL

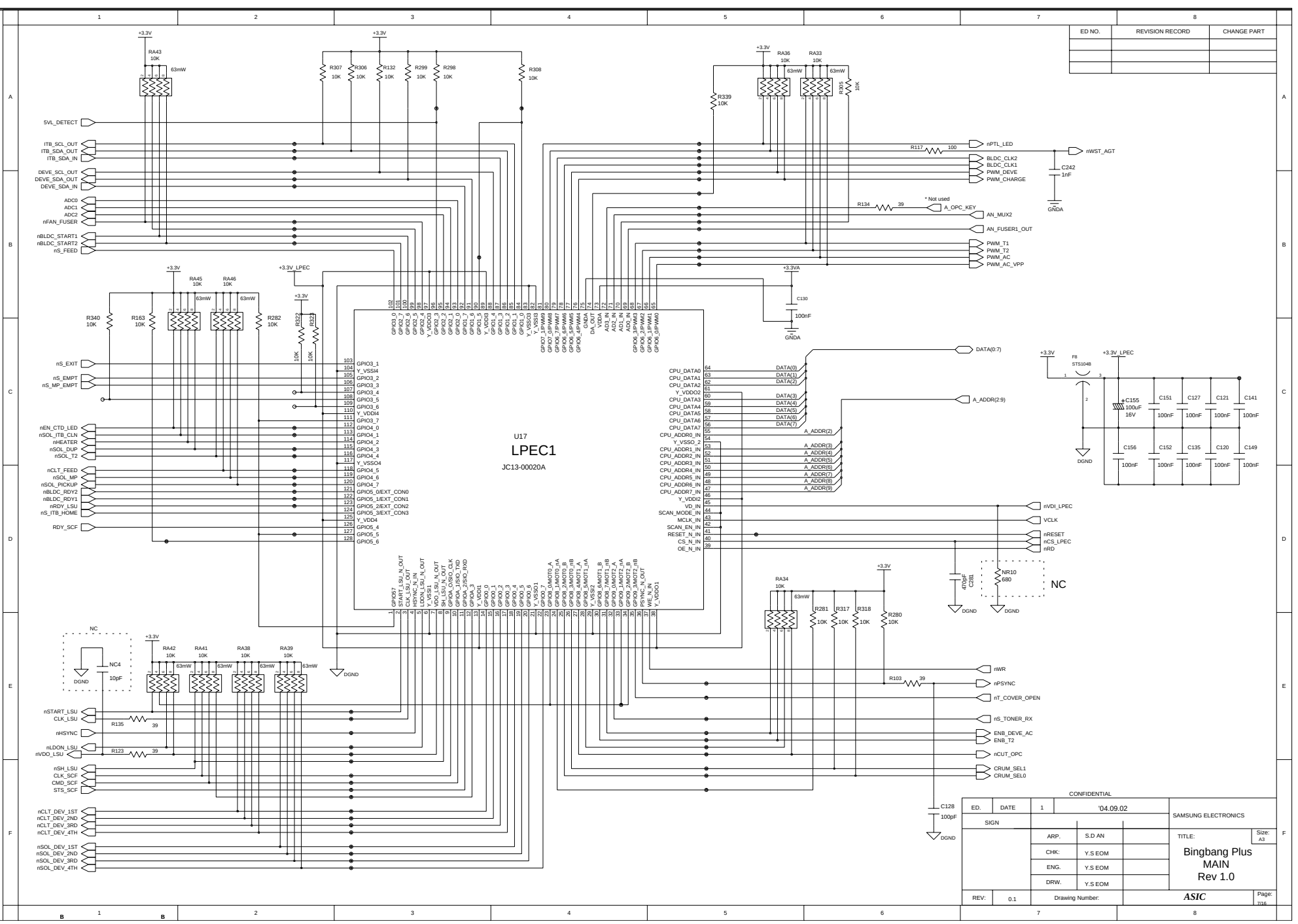
ED.	DATE	1	'04.09.02	SAMSUNG ELECTRONICS
SIGN				
		ARP.	S.D AN	TITLE: Size: A3
		CHK:	C.B.LEE	Bingbang Plus
		ENG.	C.B.LEE	MAIN
		DRW.	C.B.LEE	Rev 1.0
REV:		Drawing Number:		*PANEL & USB* Page: 5/16

ED NO.	REVISION RECORD	CHANGE PART



CONFIDENTIAL

ED.	DATE	1	'04.09.02	SAMSUNG ELECTRONICS	
SIGN					
		ARP.	S.D AN	TITLE:	Size: A3
		CHK:	C.B.LEE	Bingbang Plus MAIN Rev 1.0	
		ENG.	C.B.LEE		
		DRW.	C.B.LEE		
REV:		Drawing Number:		*P 1284*	Page: 6/16


U17
LPEC1
JC13-00020A
ED NO.
REVISION RECORD
CHANGE PART
CONFIDENTIAL
SAMSUNG ELECTRONICS
TITLE:
Bingbang Plus
MAIN
Rev 1.0
ASIC
DRW.
Y.S EOM
ENG.
Y.S EOM
CHK:
Y.S EOM
ARP.
S.D AN
SIGN
DATE
'04.09.02
REV:
0.1
Drawing Number:
Page:
7/16
NC
* Not used
A_OPC_KEY
nPTL_LED
nWST_AGT
AN_MUX2
AN_FUSER1_OUT
PWM_T1
PWM_T2
PWM_AC
PWM_AC_VPP
BLDC_CLK2
BLDC_CLK1
PWM_DEVE
PWM_CHARGE
5VL_DETECT
ITB_SCL_OUT
ITB_SDA_OUT
ITB_SDA_IN
DEVE_SCL_OUT
DEVE_SDA_OUT
DEVE_SDA_IN
ADC0
ADC1
ADC2
nFAN_FUSER
nBLDC_START1
nBLDC_START2
nS_FEED
nS_EXIT
nS_EMPT
nS_MP_EMPT
nEN_CTD_LED
nSOL_ITB_CLN
nHEATER
nSOL_DUP
nSOL_T2
nCLT_FEED
nSOL_MP
nSOL_PICKUP
nBLDC_RDY2
nBLDC_RDY1
nRDY_LSU
nS_ITB_HOME
RDY_SCF
DATA(0:7)
A_ADDR(9:2)
nVDI_LPEC
VCLK
nRESET
nCS_LPEC
nRD
nWR
nPSYNC
nT_COVER_OPEN
nS_TONER_RX
ENB_DEVE_AC
ENB_T2
nCUT_OPC
CRUM_SEL1
CRUM_SEL0
nSTART_LSU
CLK_LSU
nHSYNC
nLDON_LSU
nVDO_LSU
nSH_LSU
CLK_SCF
CMD_SCF
STS_SCF
nCLT_DEV_1ST
nCLT_DEV_2ND
nCLT_DEV_3RD
nCLT_DEV_4TH
nSOL_DEV_1ST
nSOL_DEV_2ND
nSOL_DEV_3RD
nSOL_DEV_4TH
+3.3V
+3.3V_LPEC
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GNDA
63mW
10pF
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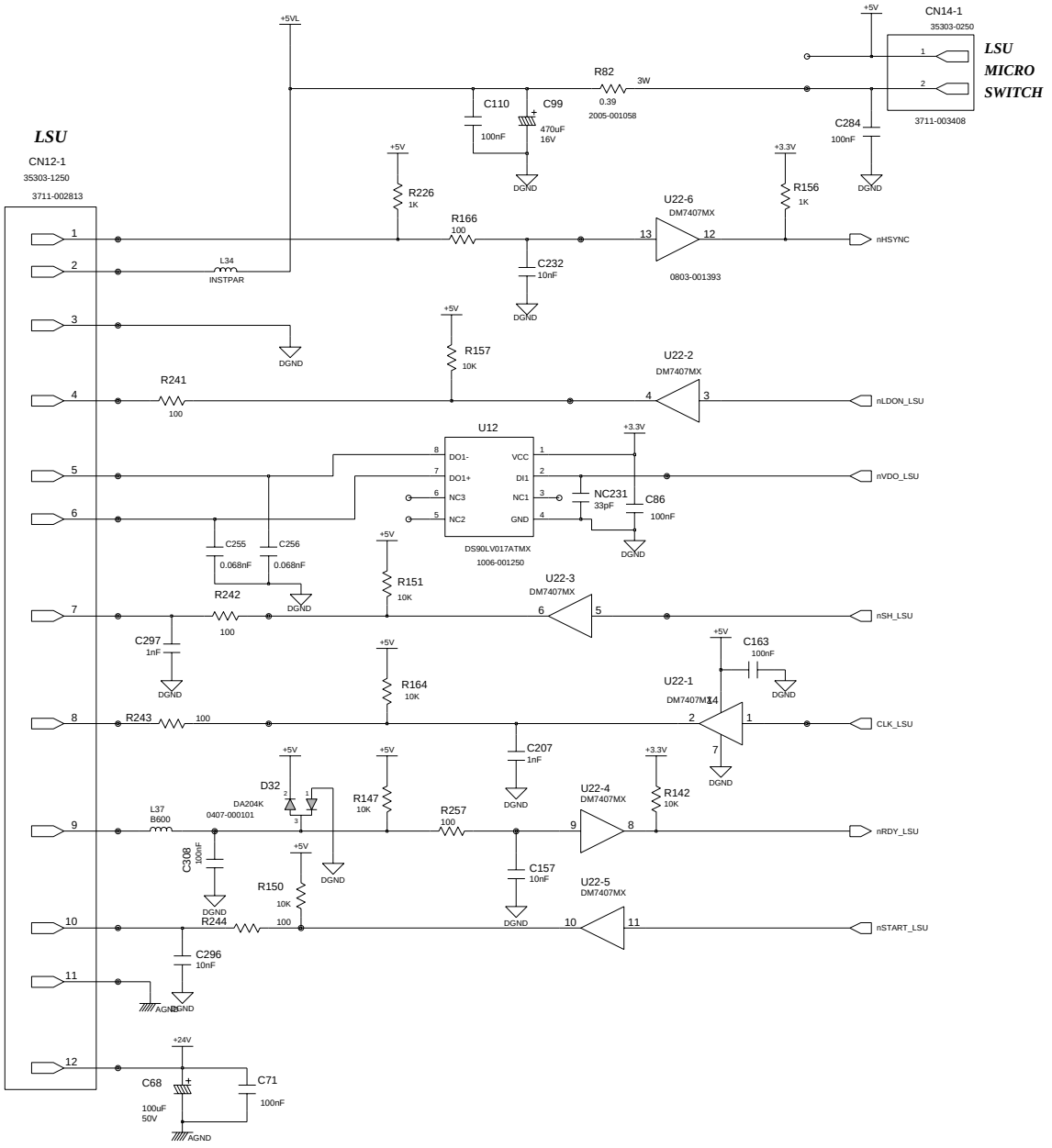
1nF
100uF
16V

ED NO.	REVISION RECORD	CHANGE PART



CONFIDENTIAL

ED.	DATE	1	'04.09.02	SAMSUNG ELECTRONICS
SIGN				
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		ENG.	Y.S EOM	
		DRW.	Y.S EOM	
REV:	0.1	Drawing Number:		BUFFER & LSU Page: 8/16

ED NO.	REVISION RECORD	CHANGE PART

SMPS

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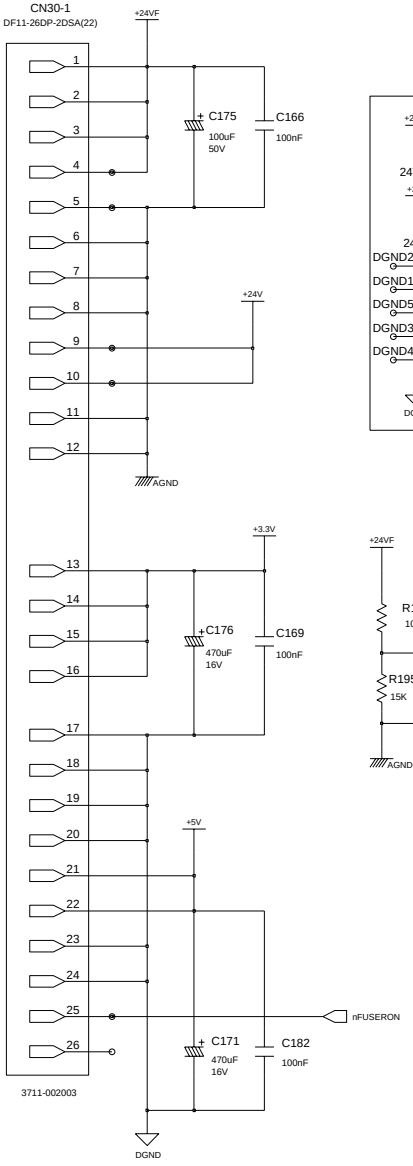
DF11-26DP-2DSA(22)



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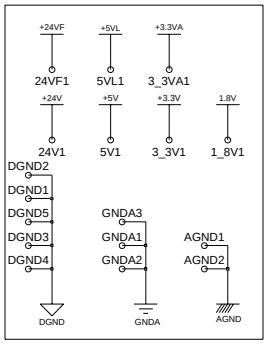

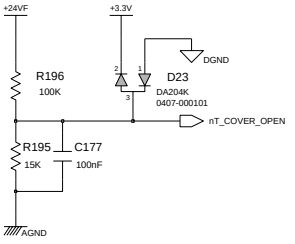

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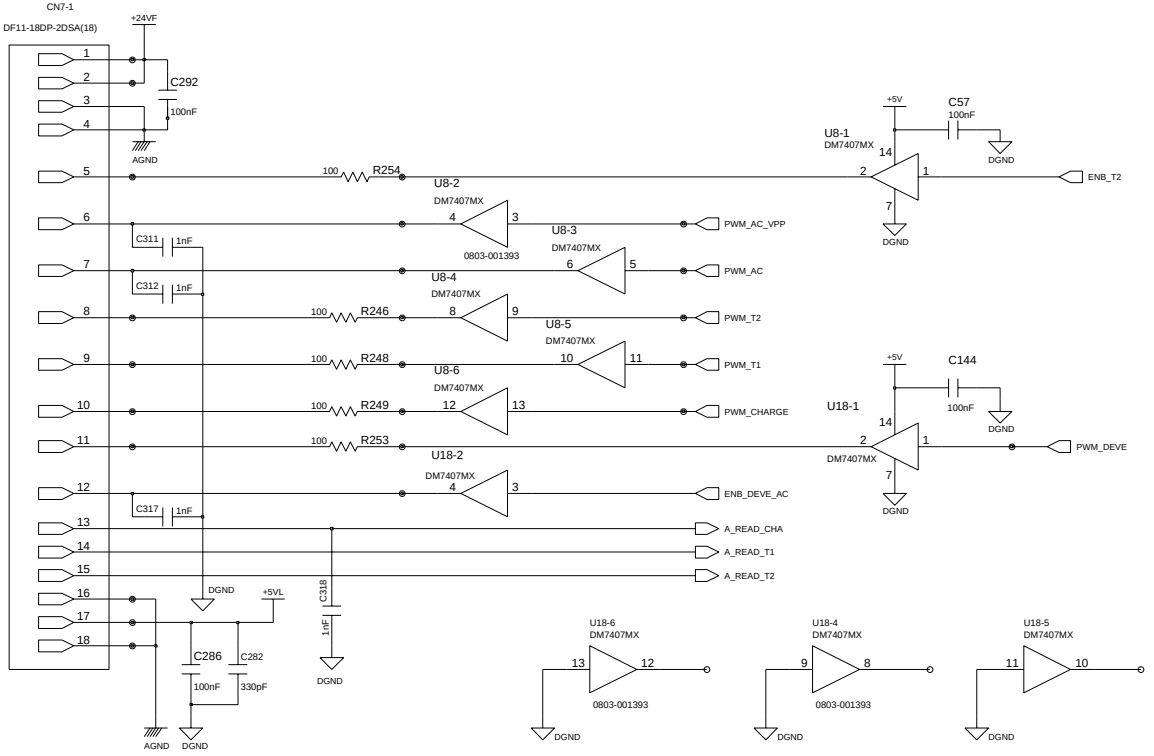

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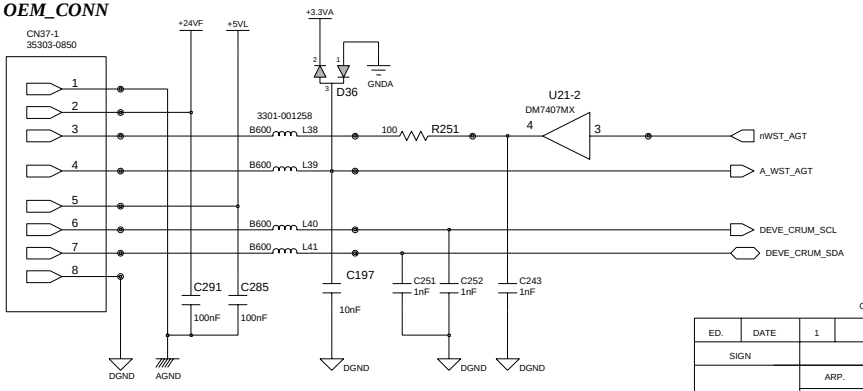

CONFIDENTIAL

ED.	DATE	1	'04.09.02	SAMSUNG ELECTRONICS
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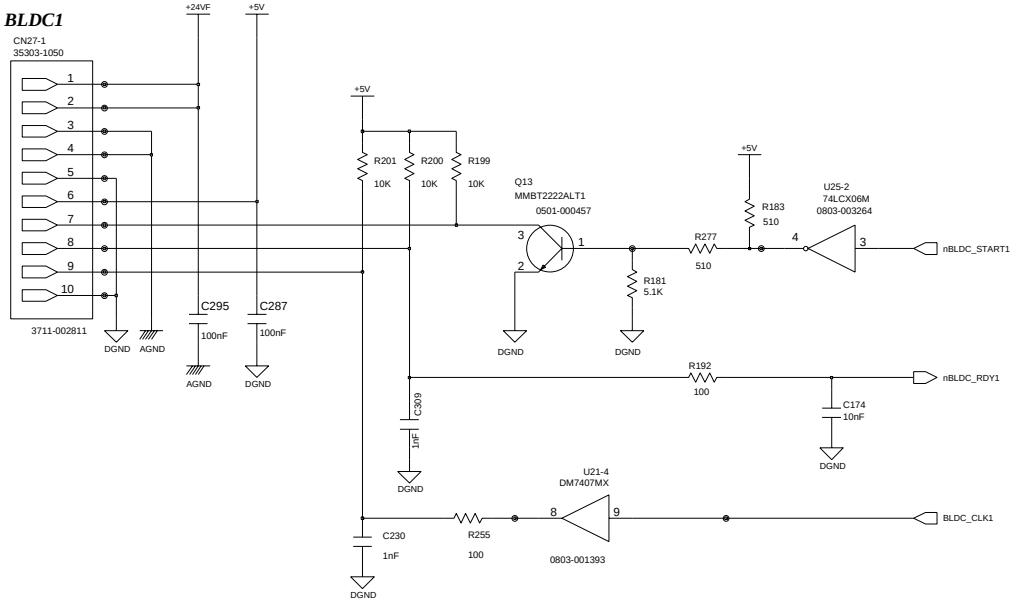
REV:		Drawing Number:		SMPS & HVPS Page: 9/16

ED NO.	REVISION RECORD	CHANGE PART

BLDC1



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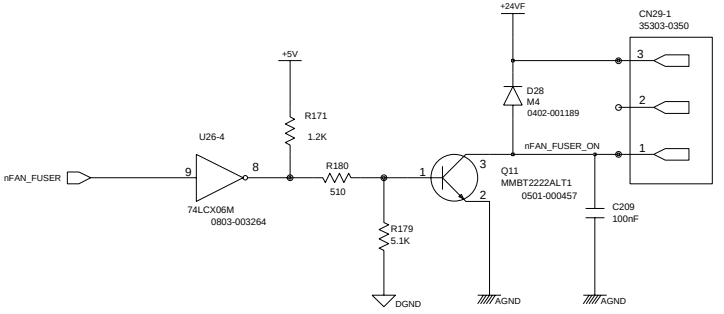

CONFIDENTIAL

ED.	DATE	1	'04.09.02	SAMSUNG ELECTRONICS	
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		ENG.	Y.S EOM		
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REV:		Drawing Number:		MOTOR	Page: 10/16

ED NO.	REVISION RECORD	CHANGE PART

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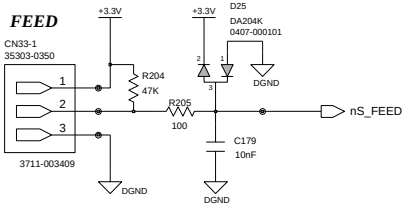

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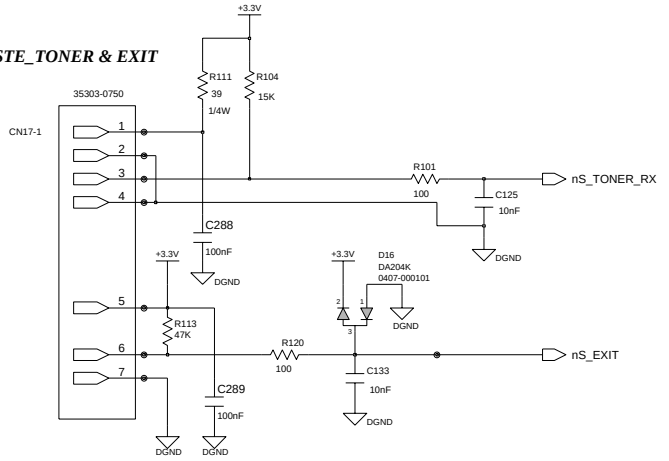

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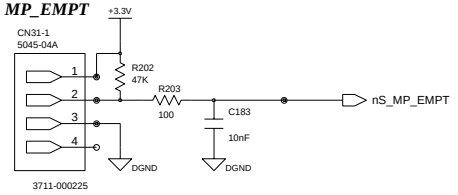

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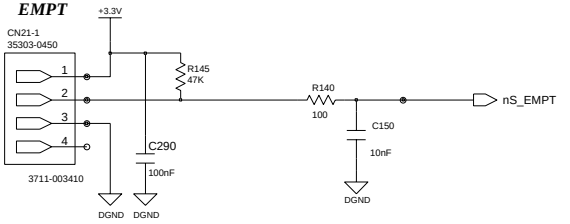

CONFIDENTIAL

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		ENG.	Y.S EOM		
		DRW.	Y.S EOM		
REV:		Drawing Number:		*SENSER*	Page: 11/16

ED NO.	REVISION RECORD	CHANGE PART

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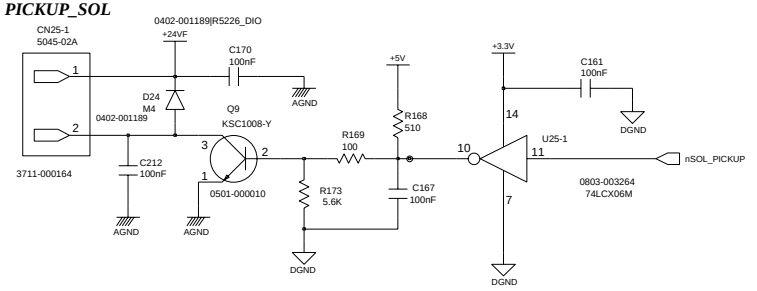

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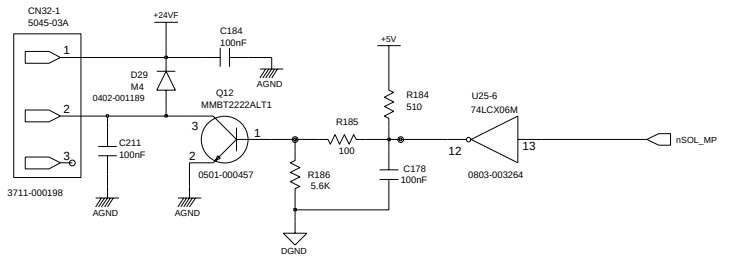

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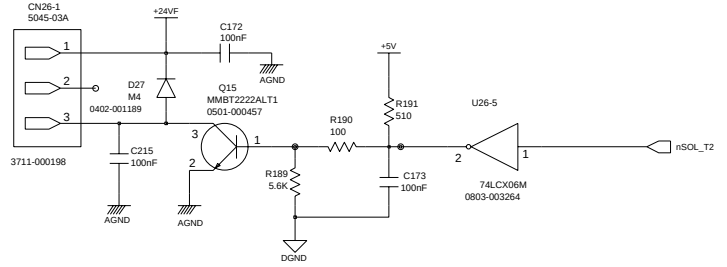

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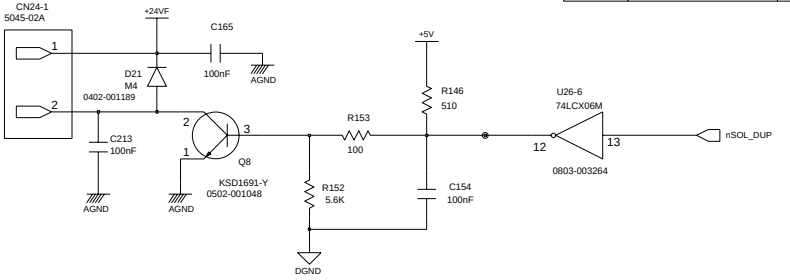

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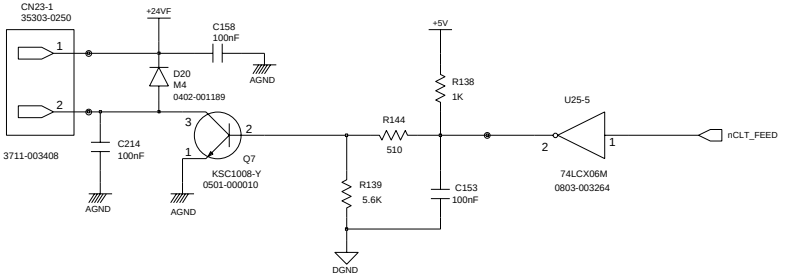

CONFIDENTIAL

ED.	DATE	1	'04.09.02	SAMSUNG ELECTRONICS
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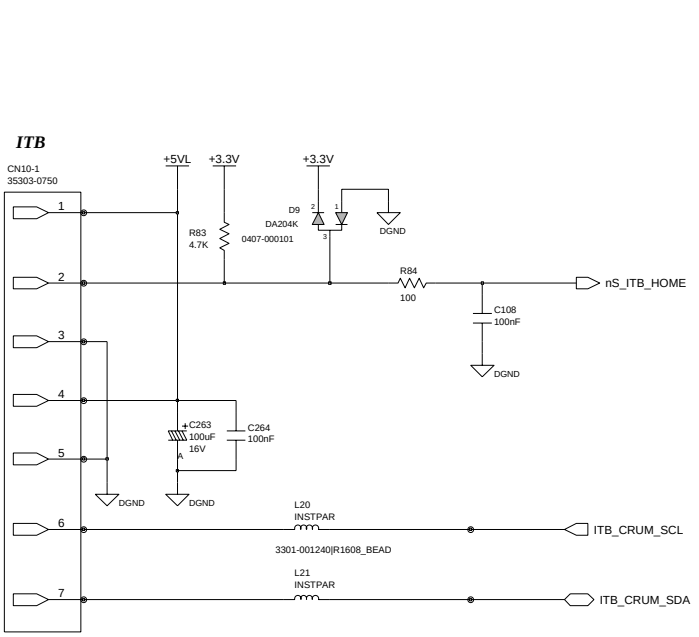
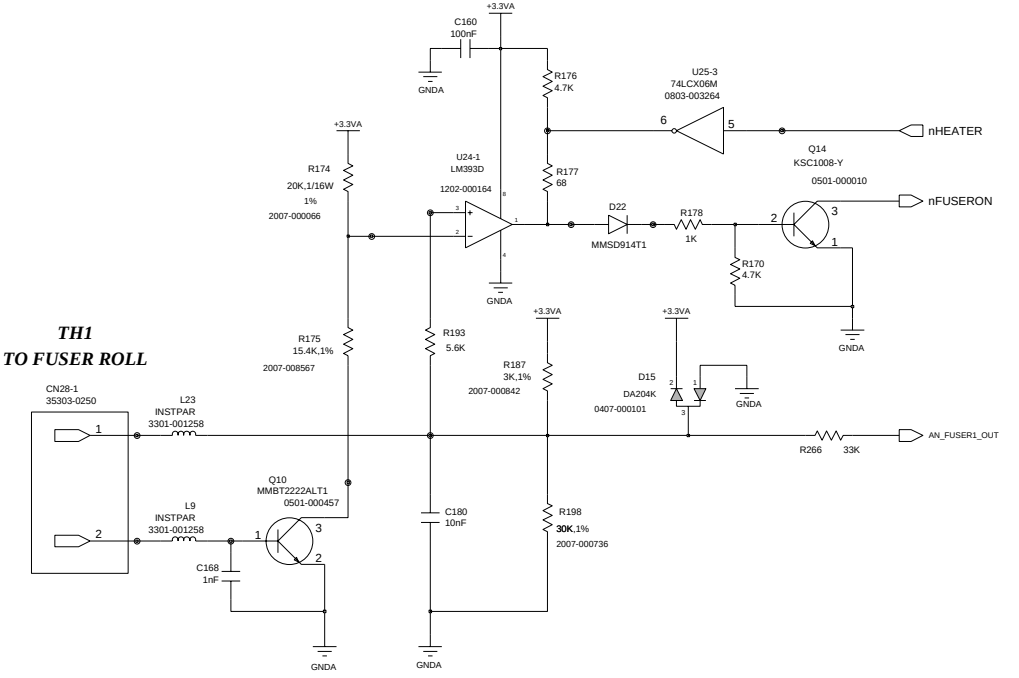
ED NO.	REVISION RECORD	CHANGE PART





CONFIDENTIAL

ED.	DATE	1	'04.09.02	SAMSUNG ELECTRONICS
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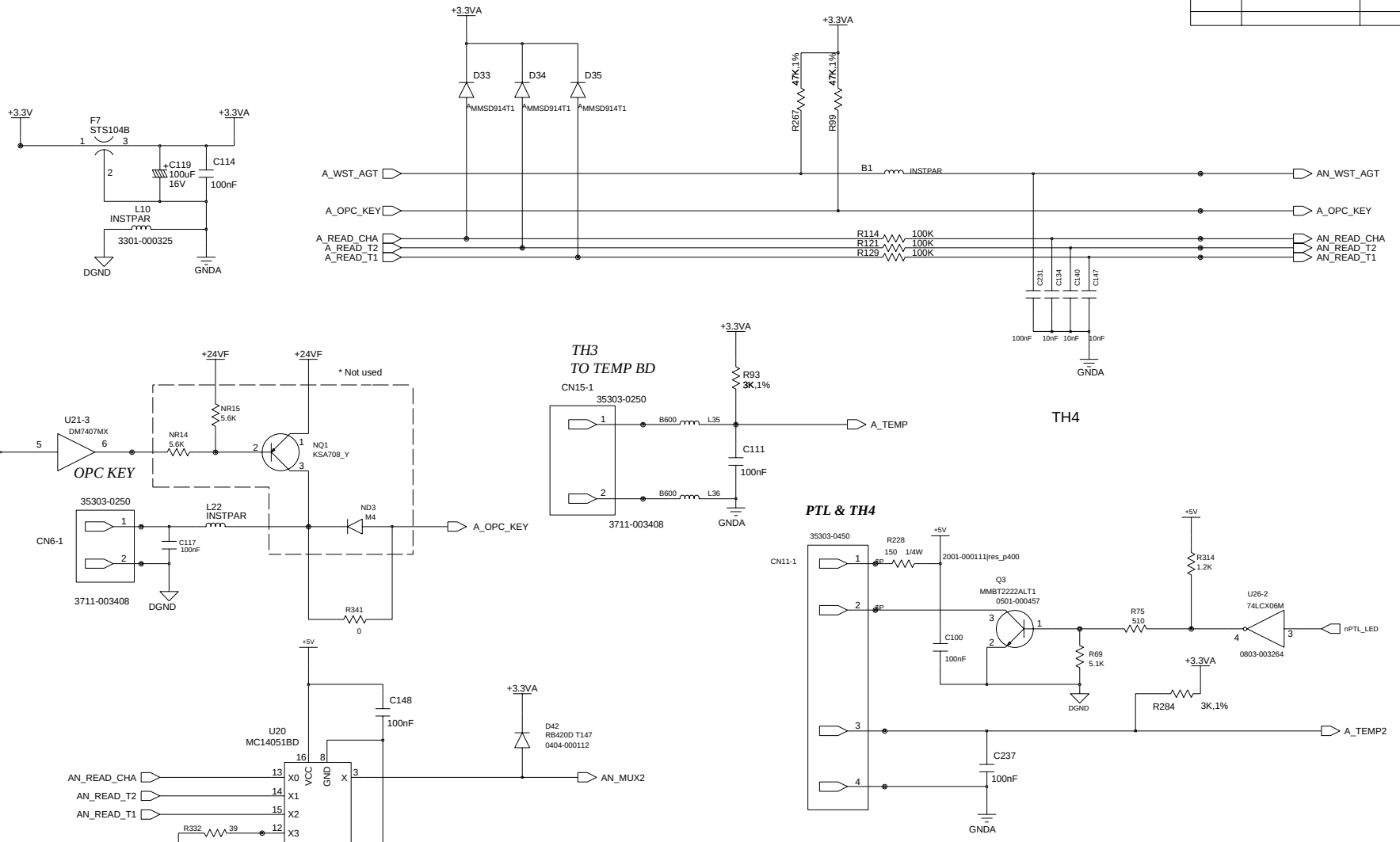
	DRW.	Y.S EOM		
REV:		Drawing Number:		ANALOG Page: 13/16

ED NO.	REVISION RECORD	CHANGE PART



CONFIDENTIAL

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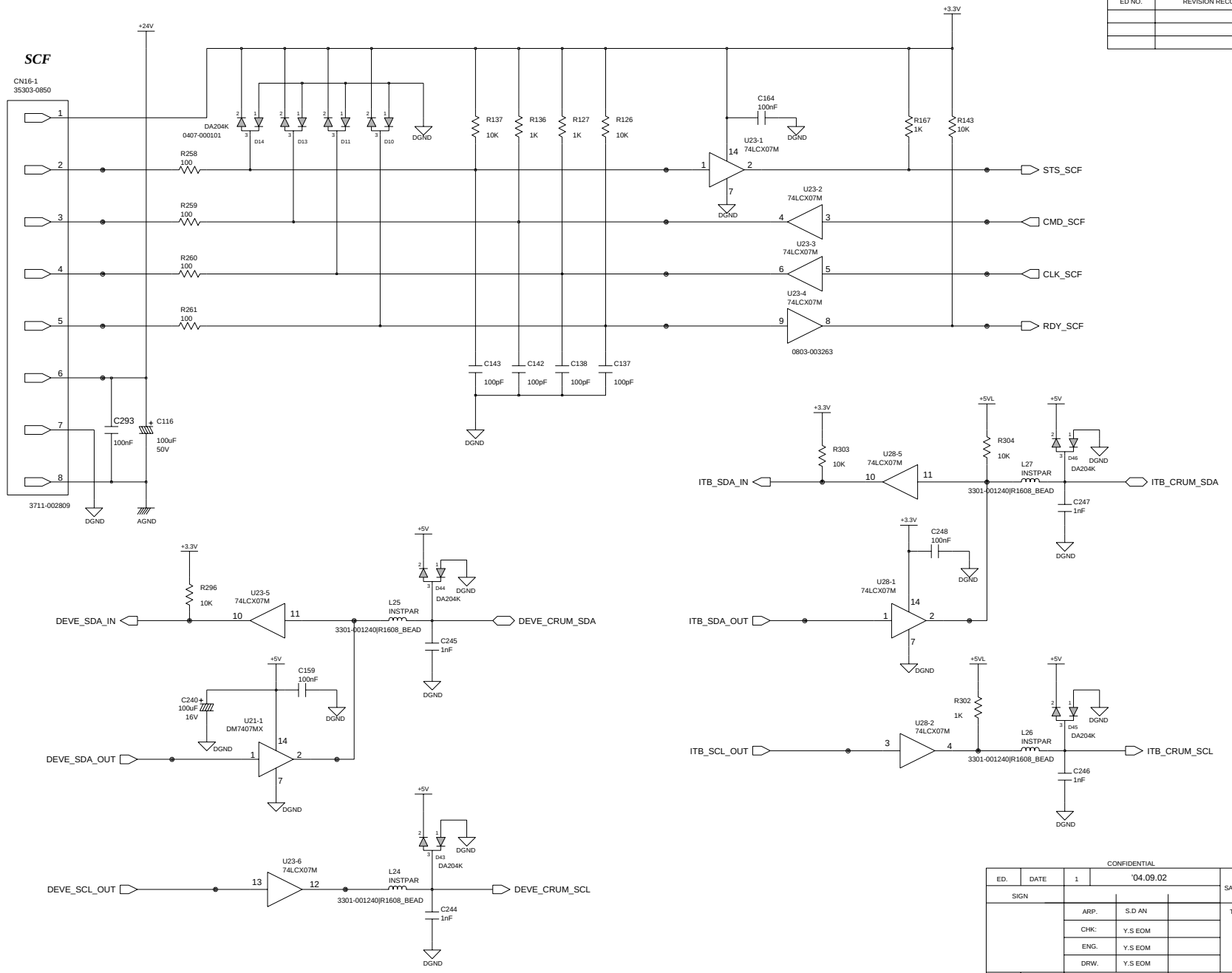
ED NO.	REVISION RECORD	CHANGE PART



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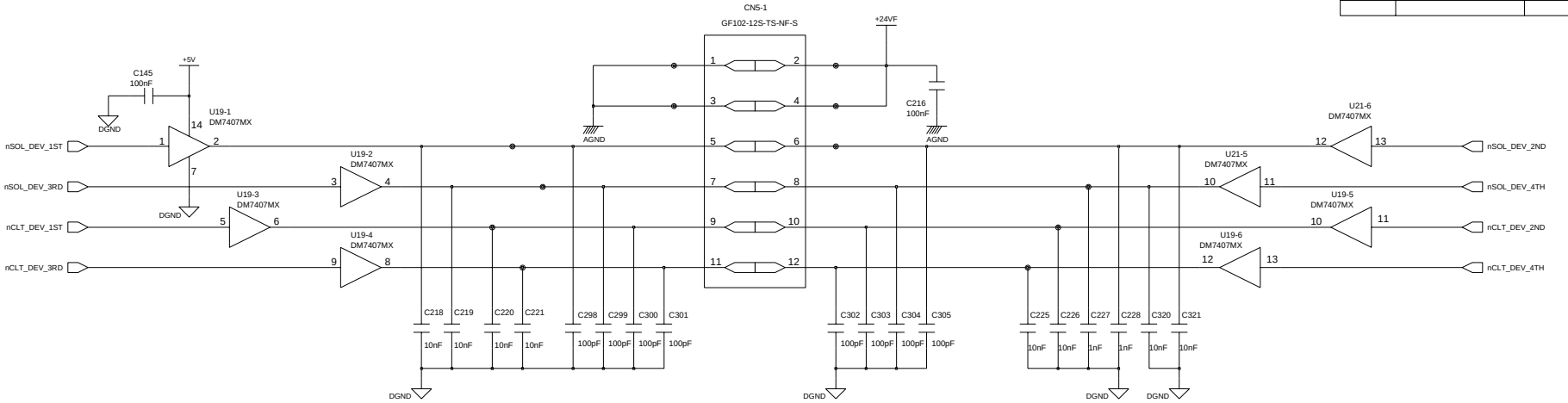
REV:		Drawing Number:	*SCF, CRUM Interface*	Page: 15/16

ED NO.	REVISION RECORD	CHANGE PART

DEVE DRIVER



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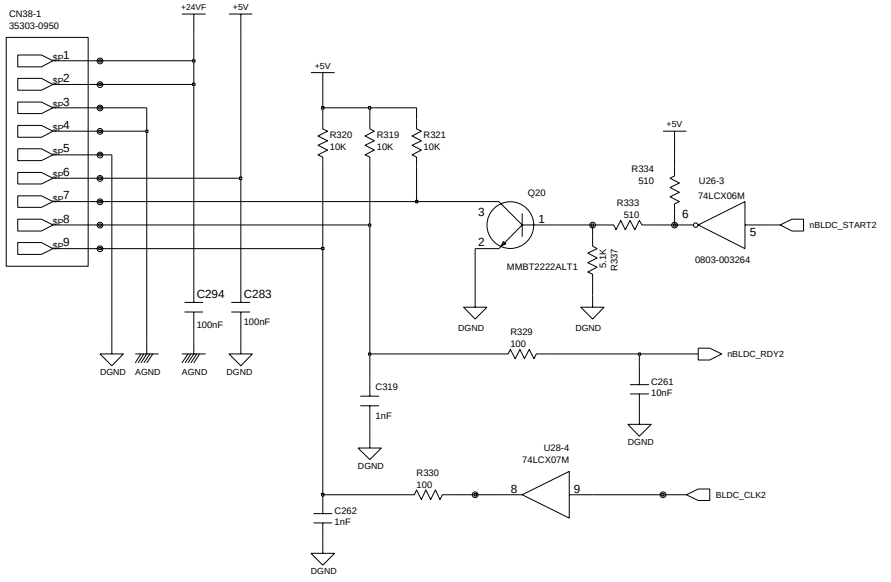

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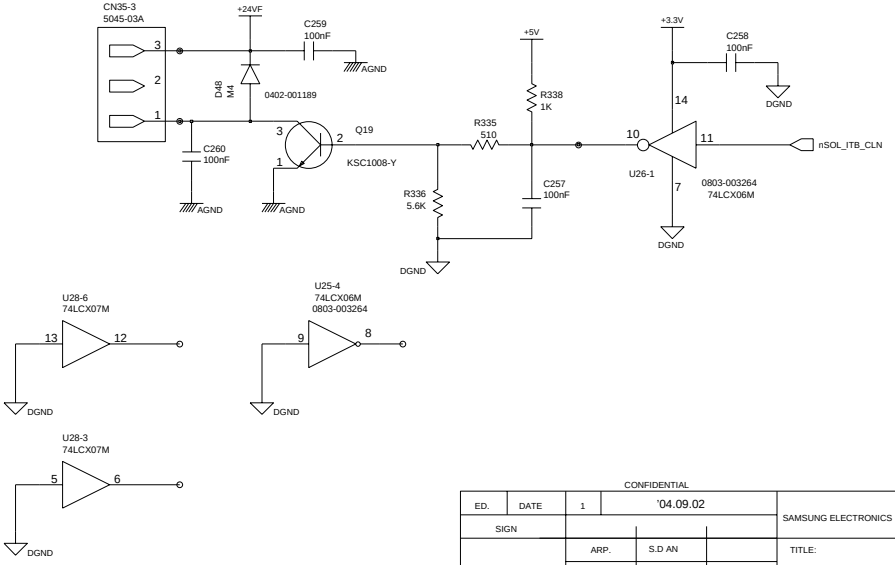

CONFIDENTIAL

ED.	DATE	1	'04.09.02	SAMSUNG ELECTRONICS
SIGN				
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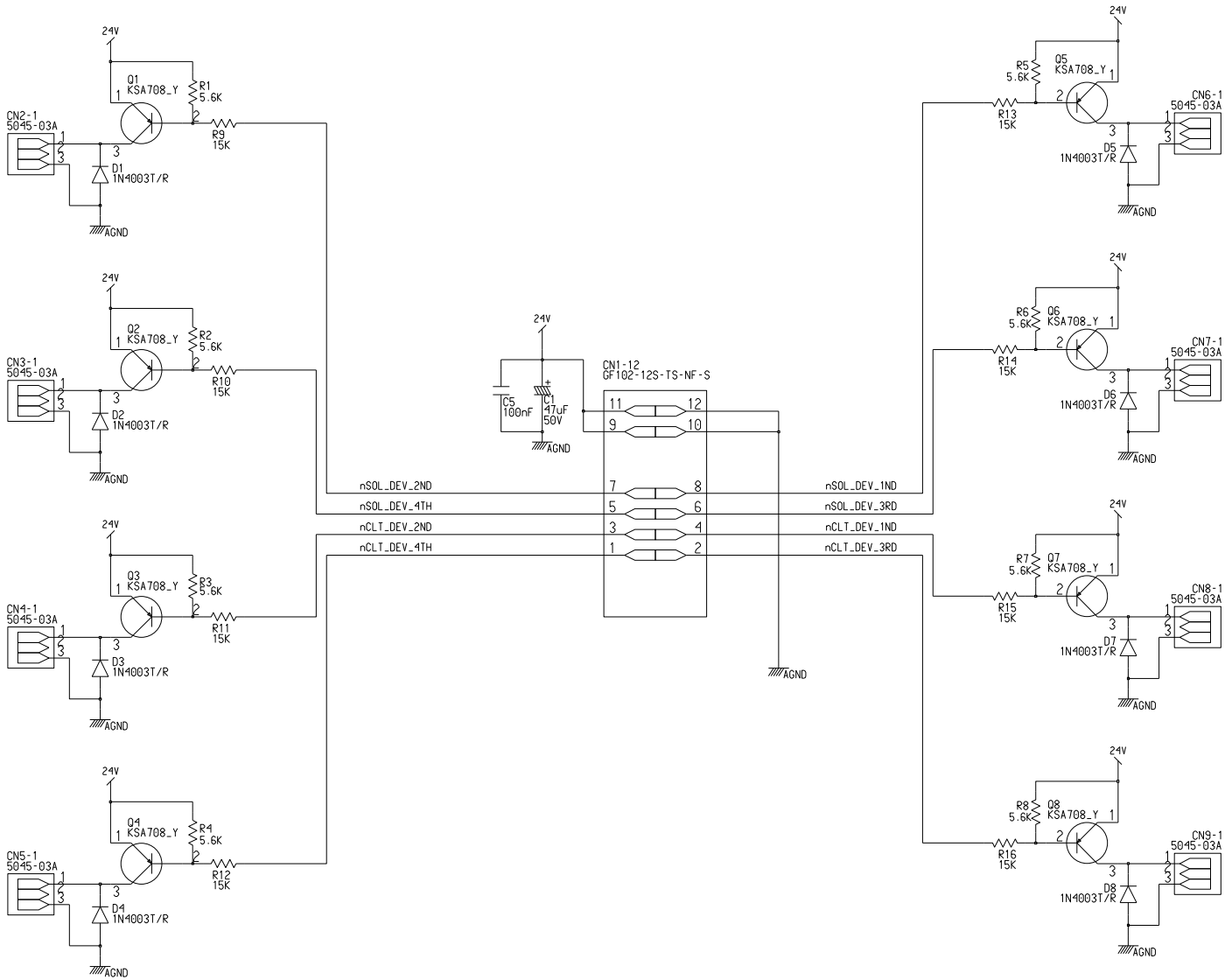
	ENG.	Y.S EOM		
	DRW.	Y.S EOM		
REV:		Drawing Number:		DEVE DRIVER Page: 16/16



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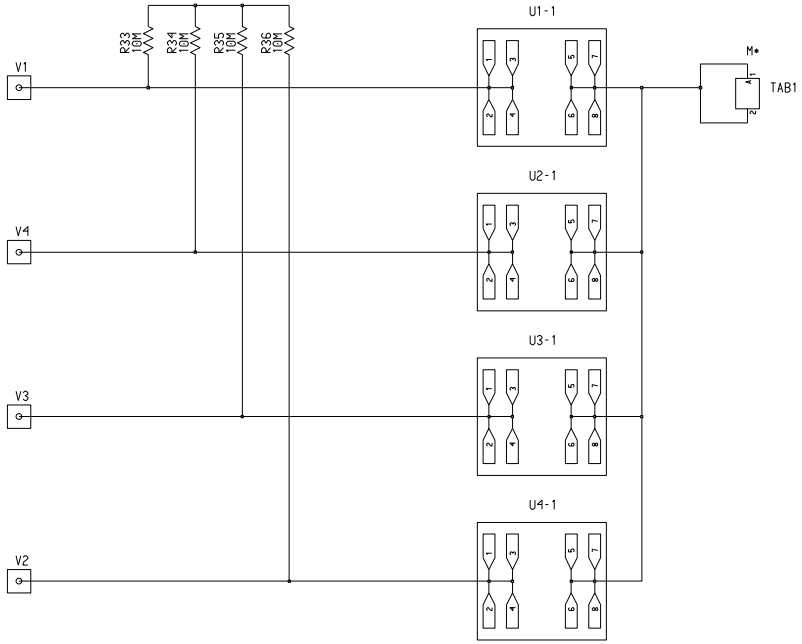
Sheet 1/2

Engineer shkim10	SAMSUNG ELECTRONICS
Drawn by shkim10	Corporate Technical Operations
R&D CHK	Printer Team
DOC CTRL CHK	TITLE: DEVE_DRIVE
MFG ENGR CHK	Size A3



Changed by shkim10	Date Changed Tuesday, May 21, 2002	Time Changed 10:01:29 am	QA CHK	REV	Drawing Number	Sheet 1/2

Engineer shkim10	SAMSUNG ELECTRONICS Corporate Technical Operations Printer Team	
Drawn by shkim10	TITLE: DEVE_DRIVE	Size A3
R&D CHK		
DOC CTRL CHK		
MFG ENGR CHK		

ED NO.	REVISION RECORD	CHANGE PART

*Crum Mapping Address

A2	A1	A0	CRUM
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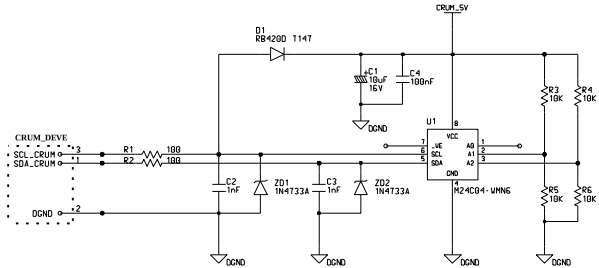
0	1	NC	Magenta Cartridge
1	0	NC	Cyan Cartridge
1	1	NC	Black Cartridge



CONFIDENTIAL

ED.	DATE	1	15,SEP,2003	SAMSUNG ELECTRONICS
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		ENG.	Y.S.EOM	
		DRW.	Y.S.EOM	
REV:	0.1	Drawing Number:		Page: 1/1

ED NO.	REVISION RECORD	CHANGE PART

*Crum Mapping Address

A2	A1	A0	CRUM
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0	1	NC	Reserve
1	0	NC	Reserve
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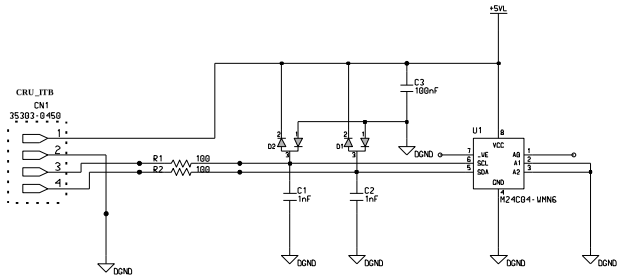

CONFIDENTIAL

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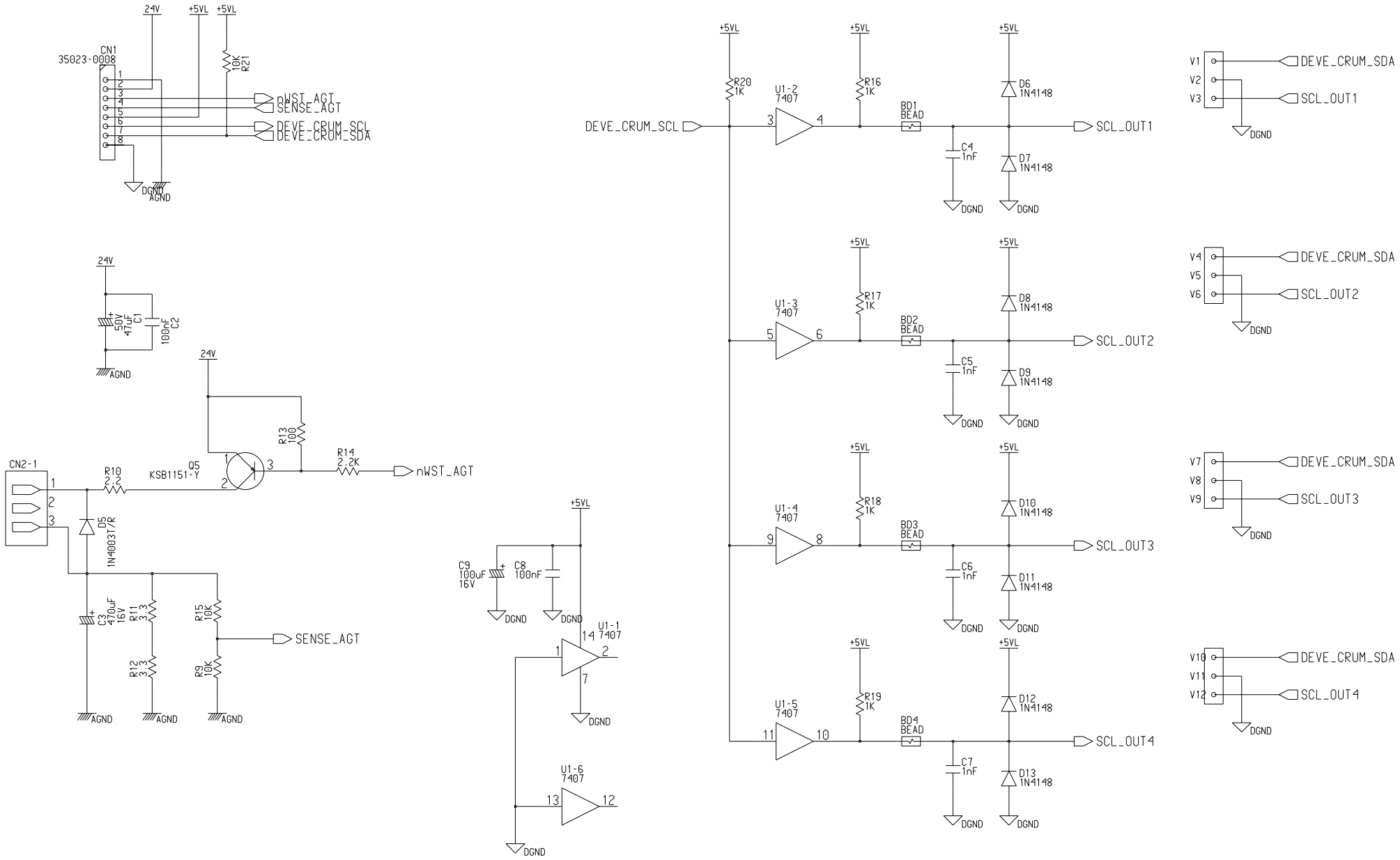
	ENG.	Y.S.EOM		
	DRV.	Y.S.EOM		
REV:	0.1	Drawing Number:		Page: 1/1



Changed by mskim2	Date Changed Monday, September 8, 2003	Time Changed 1:46:38 pm	QA CHK	REV	Drawing Number / Sheet of

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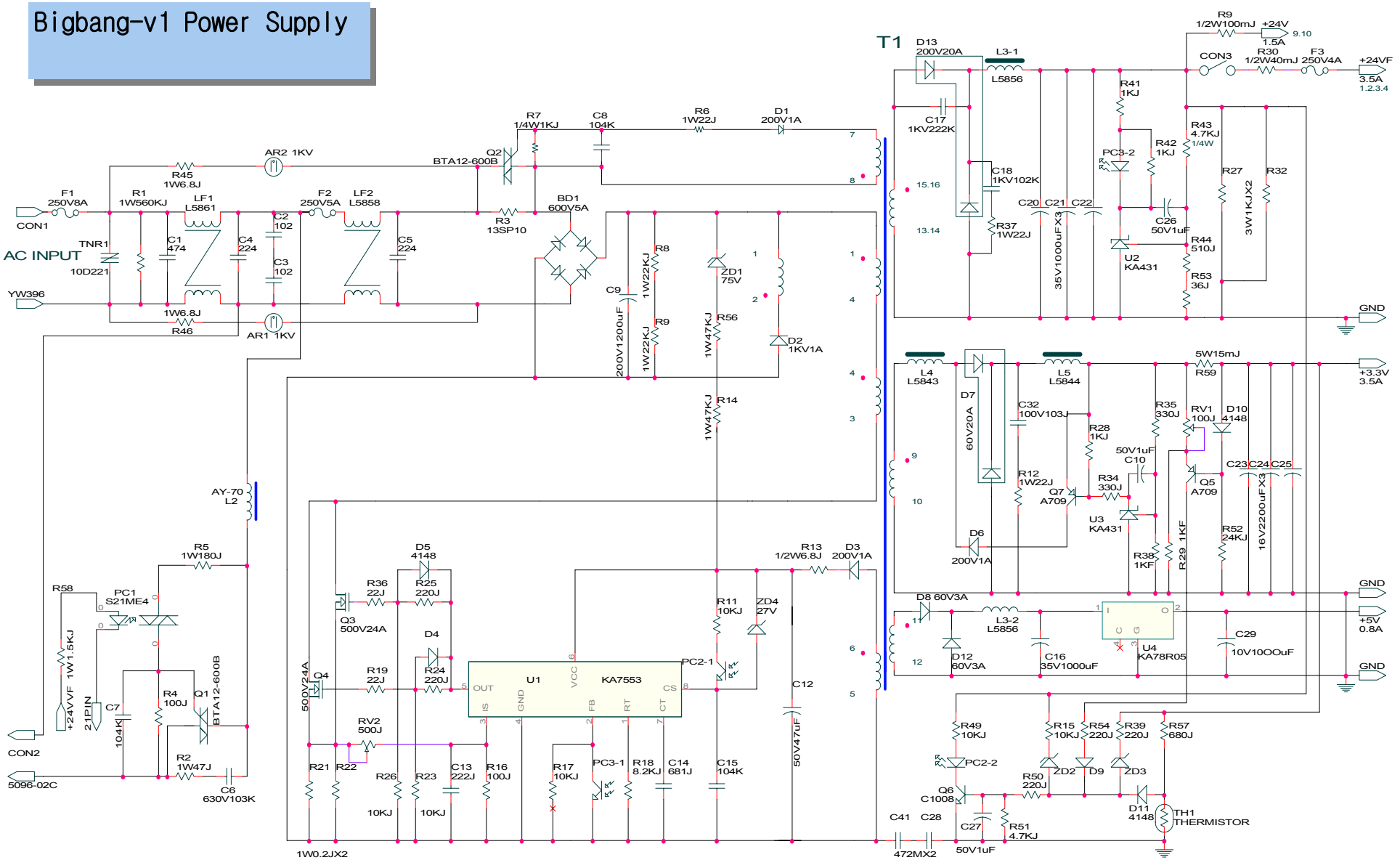
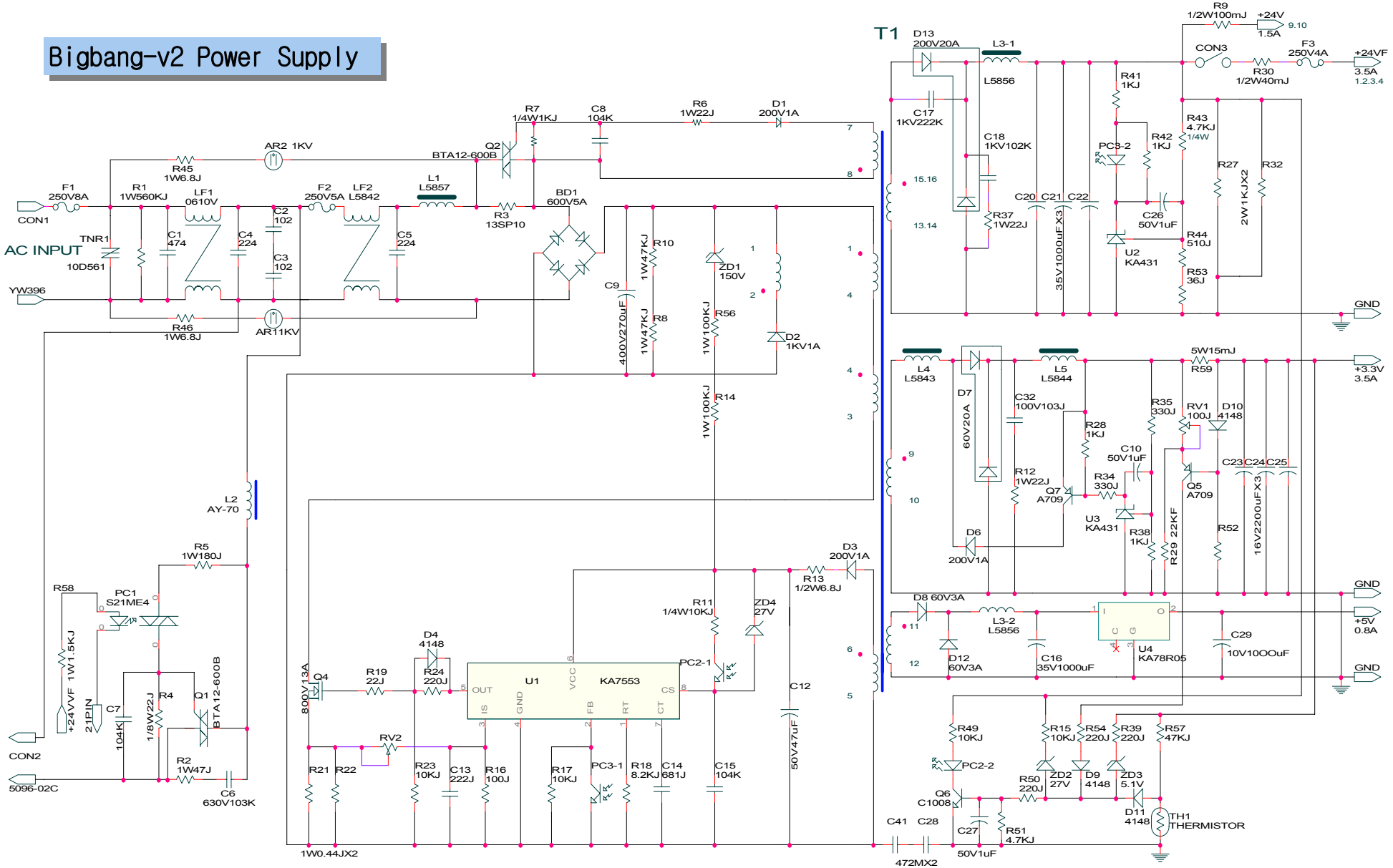
Drawn by mskim2	Address
R&D CHK	City
DOC CTRL CHK	TITLE: Ginkgo OEM PLUS
MFG ENGR CHK	

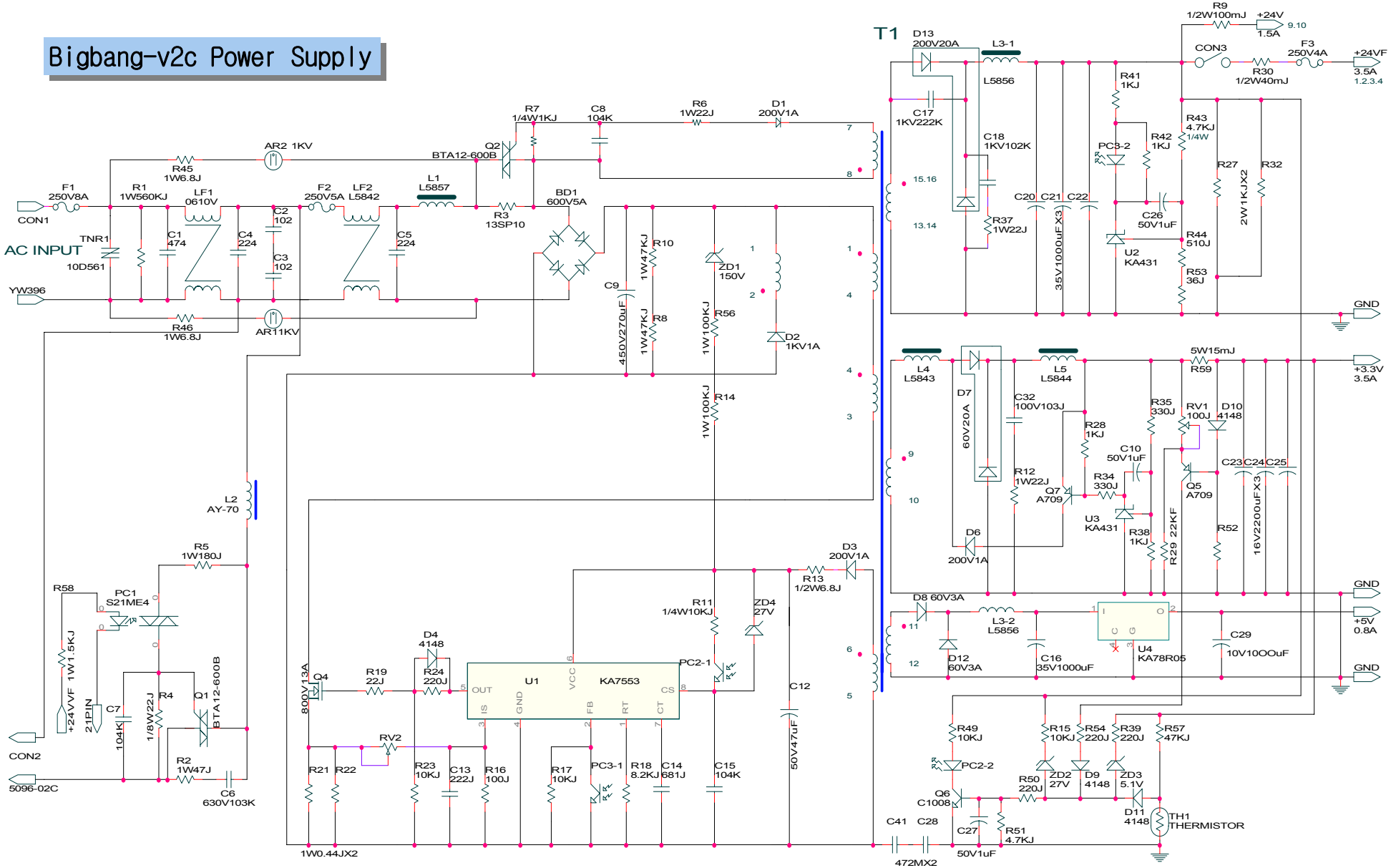
Bigbang-v1 Power Supply



Bigbang-v2 Power Supply



Bigbang-v2c Power Supply



* This service manual is also provided on the web, the ITSELF system f Samsung Electronics Co., Ltd.

http://itself.sec.samsung.co.kr

Printed in Korea.

VERSION NO. : 1.00 **CODE : JC-0131L**